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THE

MONTREAL MEDICAL JOURNAL.

A Monthly Record of Medical and Surgical Science.

EDITED BY

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VOL. XXIII.

Montreal:

PRINTED & PUBLISHED BY THE GAZETTE PRINTING COMPANY

1895.

BOSTON MEDICAL
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MONTREAL MEDICAL JOURNAL.

VOL. XXIII. JULY, 1894. No. 1.

Original Communications.

THE NATURE AND TREATMENT OF THE MORPHIA HABIT.

By EDWARD C. MANN, M.D. New York.

Physician to Sunnyside. A private hospital for Diseases of the Nervous System, the Opium Habit and Inebriety.

Although the opium habit is not known to the people as alcoholic excess is, yet thousands have become infected with this ruinous propensity, which, unless it is pursued to excess or becomes complicated with grave diseases rarely attracts attention, its concealment being generally so successful as to defeat inquiry. The individual who takes opium or morphine, generally begins with small doses and keeps the habit a profound secret from the other members of the family, and it is not until the irresistible craving has been thoroughly established that the patient's sense of shame at the fatal habit to which he is a slave disappears and he becomes lost to self-respect and self control. He is now unable to live without his opium or morphine. His constitution demands it and he is only capable of discharging his duties and occupations by the artificial and temporary health imparted by his customary dose. He has, by taking daily hypodermics, created a new physiological want, a systemic demand, which has become peremptory and irresistible. Each dose restores for the time, the strength and activity enfeebled by previous indulgence, but this effect soon fades away. The fearful craving again appears, the patient soon weakly yields and takes a hypoder-

mic. His dull unimpressive, sunken, lusterless eye becomes for a time clear, sparkling and restless; the pale haggard features become flushed as in youth and the muscular system is restrung, so that the tremulous hand becomes steady and the tottering gait firm and assured. These contrasts are diagnostic of the opium habit, together with a peculiar expression of countenance, although the patient will generally deny that he ever takes opium. The amount that patients take daily, differs very much. Patients generally write me that they are taking from three to twelve grains daily. I have known of a very few cases who took one drachm of morphia by the mouth daily, but these are rare. Coleridge took upon one occasion one quart of laudanum in twenty-four hours while De Quincey took at the highest about 480 grains of opium daily. My experience with patients suffering from the habit has been that most of them assert that pain in some part of the body first led them to take opium and was the origin of their habit, and that subsequently, the suffering, the sinking, the wretchedness and misery which attended abstinence from it induced them to continue indulgence in the drug.

The psychical effect of opium is very interesting. A professional gentleman under my care a few years ago, acknowledged to me that he voluntarily sought opium to impart calmness and indifference in the midst of domestic unhappiness and perfectly succeeded but he acquired the fearful, irresistible craving for morphia which it was very difficult to eradicate. He soothed his heartache, but he nearly ruined his brain.

While the majority of my patients have been insidiously led into the morphia habit by taking it primarily for the relief of pain and have almost unknown to themselves become victims of the drug, I have known of more than one patient who, I am satisfied, took opium primarily to mitigate mental suffering, others take it to get up an increased vivacity or brilliancy, while some literary persons, as was the case with De Quincey, imagine that they get a restorative and creative power from its use. The habitual use of opium seems to produce a peculiar type of psycho-sensory insanity, leaving the intellectual centres of the brain comparatively untouched. The patients' views of right and wrong are perverted, and while he or she may go on with routine duties, either in public or private life,

such a patient often manifests an utter disregard of truthfulness, honesty and sincerity and after a time shows a seeming inability to exert the will in any other direction or for any other purpose than the gratification of his morbid appetite. While writing my book on the "Medical Jurisprudence of Insanity," recently published, I had a very interesting correspondence with the late Sir James Fitzjames Stephen, a judge of the High Court of Justice, Queen's Bench Division. If we are to hold with him that "sanity exists when the brain and nervous system are in such a condition that the mental functions of feeling and knowing, emotion and willing, can be performed in their regular and usual manner," then it is very problematical whether any case of alcohol or opium habit is strictly sane, for both these poisons, opium and alcohol, induce a state in which one or more of the above named mental functions is performed in an abnormal manner or not performed at all. Their due importance is not attached by lawyers to the more delicate obscure forms of disease of the brain produced by the use of alcohol and opium, and one reason is that medical science has but recently brought them to light and medical men to-day are by no means unanimous as to their nature and effects. Cases of dipsomania and cases of morphia addiction of long standing do not take the drugs they indulge in voluntarily, but on account of an irresistible craving which is a disease. They are sick men and women and it is very problematical how far they are responsible for any overt act they may commit.

It is a very delicate question in medical jurisprudence as to how far and in what cases does the fact that a person is a dipsomaniac or a morphinomaniac relieve him by the law of England or the United States, from responsibility for what would otherwise be a crime? How far is that law reasonable, in the lights of medical science to-day? From a long experience with cases of Inebriety and the Morphine Habit I think that in cases of dipsomania and morphinomania that the nerves carry to the brain a variety of abnormal and delusive impressions of external objects and occurrences, that these abnormal impressions excite emotions which affect many parts of the body in various ways and which in particular affect the brain; that the brain in some manner deals with the impress-

ions, whether of perception or of emotion which it receives, during which process the patient is only partially conscious, if conscious at all, of what we describe as emotion, motive, deliberation and choice, and that it is very doubtful if the resulting groups of bodily motions which we call voluntary action are voluntary properly, at all. Are they not rather automatic and the product of disease? I do not believe that the brain, an organ of such extreme delicacy and intricacy, can be poisoned by alcohol or opium and then perform the mental functions in the usual and healthy manner. Jurisprudence must make allowance for the profound emotional perversion of the mental faculty produced by stimulants and narcotics and always present to a greater or less degree in dipsomania and morphinomania. The feelings, affections, propensities, temper, habits and conduct are affected in these cases.

Dipsomania and morphinomania principally affect the knowledge by which our actions are guided; the feelings by which our actions are prompted and the will by which our actions are performed; and all this must be considered in reference to the responsibility of persons shown to have done acts which but for such effects would amount to crimes. I think the law needs to be amended so far as to incorporate the above proposition, which is strictly in accord with our present medical knowledge. It is strictly in accord with psychological medicine and mental pathology. The use of opium tends to sterility and impotence and to the extinction of the reproductive propensities. Hearing and vision are not unfrequently affected and insomnia is very common. Tremors and an unsteady ill-balanced gait are generally observable in all well developed cases. The effect of opium is invariably, although in different degrees, agreeable, soothing, stimulating and elevating; culminating as opium smokers describe in perfect bliss and complete oblivion. This stage is soon succeeded however by languor, lassitude, loathing of food, aching of the limbs, gloom and indefinable wretchedness, and these sensations are only relieved by increased indulgence, which gradually results in a complete degradation and progressive cachexia, which if not checked by the cure of the morphine habit, kills the patient. The same course of destruction of mental and physical health rewards alike the rich and

the beggar. From the time when the indescribably entrancing repose following the use of opium occurs, may generally be dated the bondage to the drug, which eventuates in ruined mind, prostrated health and blasted hopes. The majority of morphine habituates take the drug, not because they want it, but to relieve the terrible sensations which attack them when they are without it, and they are thus forced deeper and deeper into a habit which they honestly detest, because they can see no way out of the dilemma into which they have plunged themselves by their habitual use of morphine to relieve nervousness.

There is probably no more terrible suffering than the complete exhaustion, the prostration of mind and body which these patients suffer. Such patients have a full consciousness of their position but are powerless to emancipate themselves from the opium habit. Their miseries and anguish are extreme, but in spite of all effort they find themselves forced back again into the habits.

These cases can be permanently cured by medical aid and systematic treatment. There are no patients with any disease who more require to be lifted up out from the depths of their suffering and are in greater necessity of careful nursing, consideration and attention.

Treatment.—The opium or morphine habit is a curable disease, and I only desire to know that an opium sufferer honestly desires a cure to assure him that this result can be accomplished. I know of no disease that yields a better percentage of cures to the proper treatment. Primarily, the patient must put himself under the necessary control and must, as I have said desire a cure himself.

The nervous system of most persons is too delicate to bear the shock of a total deprivation of the morphine at once. Grave nervous disorders follow such a course. In my own plan of treatment I employ a reductionary course of treatment keeping the patient's nervous system quiet with a combination of the bromides, gradually increasing the bromides as I decrease the morphia until on the tenth day after admission my patient is taking no morphia and has avoided all suffering and nervous prostration. For a tonic during this first period of treatment I use the Elixir of Gentian with the Tr Ferri Chlor. I generally combine the bromides of Ammonium and

Sodium and eliminate them from the system after I stop the morphine by warm baths, Sweet Spirits of Nitre and Digitalis. The reflex action of the spinal cord which has purposely been kept depressed by the bromides during the reductionary treatment is now excited by strychnia and the central nervous system is stimulated and invigorated by the daily use of the induced or Faradic current of electricity as general faradization. To obviate any psycho-somatic suffering after withdrawal, I use Nitro-Glycerine $\frac{1}{100}$ gr., by the mouth while at the same time I give a hypodermic injection of $\frac{1}{4}$ to $\frac{1}{2}$ gr., of Sulphate of Sparteine. I use this for perhaps two or three days after complete withdrawal. Nerve tonics are also employed and I have a preparation of my own which I call the Glycero-Phosphates, which consists of the Phosphates of Soda, Lime and Potash in a Glycerine-Phosphoric Menstrum that I feed the patient liberally as a brain and nerve tissue food. I prefer this to any preparation of the phosphates that is made for sale and I get better results from it. My emaciated patient generally gains in weight and strength daily until he has gained in a month's time from 25 to 30 pounds of flesh. His shattered constitution is built up and in about six weeks he is generally well enough to be discharged and to resume his place in society free from all craving for morphia. Exceptional cases require a longer course of treatment. In all cases where I can prevail upon the patient to do so, a sea voyage is taken to give a hardiness and vigour to the nervous system which hardly anything else does so well, after the course of treatment is finished. I am very careful about the diet of my patients and keep them on a proteid diet which requires the least expenditure of vital force and oxygen by the system to digest, appropriate and assimilate it; only a minimum of starchy food and vegetables are allowed on the diet list. 801 *Madison Ave.*

APPENDICITIS.

By Ed. Evans, M.D., Lacrosse, Wis.

At a time when this subject is being so generally discussed in societies and through the journals, the following cases may prove of interest and perhaps help forward what I believe to be the only rational treatment of the disease, viz, operation as early as the diagnosis can possibly be made.

In a recent paper (*New York Medical Journal*, June 30) Wyeth says: "In my entire experience I have yet to see a death which could not properly be ascribed to delay in timely and skilful surgical interference."

Case I. M. F., æt 25, strong, robust man; third attack. May 5th, 1894, asked by Dr. Gundersen to see the case with him with a view to operation. He first saw the case this a.m., another doctor having had the case in charge previously. Attack of only one day's duration. Immediate operation decided upon. Patient in great pain, localised in right side, where there is marked tenderness, very slight fullness, indistinct dullness, great rigidity, obstipation, vomiting, no tympanites, fast pulse, no fever.

Operation.—Lateral incision. Omentum adherent, very œdematous. Some opaque, milky fluid and flakes of lymph escaped. Bowels firmly matted about cæcum. Small abscess found between end of cæcum and parietes, in depth of which appendix could be felt, firmly adherent. Abscess cleaned out and drained. There was general peritonitis and patient died June 8th.

An acute exacerbation of pain the previous evening, accompanied by much vomiting and prostration, probably marked the fatal extension of the disease, before which operation might have saved the patient.

Case II. L. D., æt 15, delicate boy with rheumatic endocarditis. First attack May 6th, during morning taken with

severe pain in abdomen and vomiting. I was called during the evening. Found him in severe pain, general over abdomen, but most intense in epigastrium and right side. No tympanites or rigidity, no distinctive tenderness. Pulse and temperature normal. May 7th, pulse 100; temperature 100½°. Pain and tenderness localized over McBurney's point, where there is a very little dullness, but no tumour, no tympanites. Under morphine, vomiting had ceased, pain was lessened and he had slept well, and he appeared well enough to encourage the Fabian policy of waiting.

Operated in St. Francis Hospital, 32 hours after onset. Pulse 100; temperature 102°. Lateral incision. About two drams of slightly turbid fluid escaped on incising peritoneum. Intestines slightly congested and a few slight adhesions joined some coils of ilium to cæcum. The appendix was found doubled up behind and external to cæcum. It was distended and tense (2 c.m. in diameter) and adherent everywhere. It was removed, stump cauterized, and iodoform gauze drain used. Recovery uneventful. Temperature never rose to 99°, and he left hospital in 2 weeks.

Appendix contained about one and one-half drams of dark, foul, grumous material. The mucosa was black and ulcerated, and at one point near the base the whole thickness of wall was dark and softened, and would undoubtedly soon have perforated.

Case III. C. A., æt 14, cousin of Case II., Oct 2, 1892. First attack began with pain, vomiting, localized tenderness and fever.

Oct. 3rd. About same.

Oct. 4th. Seemed much better.

Oct. 6th. Much worse. Great pain and tenderness everywhere over abdomen, tympanites, vomiting, very fast pulse, temperature 102°.

Operation.—Found a large stinking collection of pus, general suppurative peritonitis and a perforation of base of appendix, from which fæcal matter oozed. Removed appendix, cleaned out abdominal cavity and drained. Death three days later.

This was just such a case as the conservative surgeon would consider an ideal one for temporarizing. It was not severe at onset; apparently much better on third day, yet next day it proved beyond hope of successful interference.

It is interesting to compare the last two cases. The pathological condition in each case was exactly similar; but in the one timely interference saved his life.

Case IV. J. McG., æt 42, came to office Jan. 31st, desiring to know cause of a small and painful lump in right side. Found a small tumour in site of appendix and advised its removal. Gives a history of occasional severe attacks of pain, centring at above point for about 4 years, also irregular bowels, either constipation or diarrhœa, and very often soreness and tenderness.

Operated Feb. 2nd.—Tumour, consisting of appendix, firmly adherent between cæcum and last two inches of ileum presented beneath incision, adhesions separated with difficulty. Appendix removed and stump buried in end of cæcum. Small drainage tube used. Rapid recovery and at work again in four weeks. Appendix distended with dark grumous contents and mucosa black and ulcerated at numerous points. Proximal end strictured but not quite occluded.

Case V. H. B., æt 32. Operated March 13 by Dr. Christensen. Found a small abscess between cæcum, base of appendix and ileum entirely enclosed by adhesions. This was cleansed out and appendix removed and drainage employed. Discharged cured April 27th. Appendix had ruptured at base. He had had repeated attacks, and a few weeks previous to operation had been examined by Drs. Christensen and Gundersen and myself, and a small tumour felt, which we agreed was the thickened appendix; but for some reason operation was not done. Shortly afterwards he was taken seriously ill, with what the attending doctor told him was peritonitis, and that he narrowly escaped death, was quite evident at operation.

Case VI. H. W., æt 28th. Operated April 19th, by Dr. Gundersen. Patient was seen by a doctor in the country a few weeks previous, suffering from a mild attack (first) of appendicitis. He advised him to come to hospital and have it

removed as soon as he was able. The patient readily consented, as one of his neighbours had succumbed to the same disease some time before.

Operation was very easy. Appendix was free from adhesions. Recovery rapid.

Appendix on examination presented all the appearances described and figured in a paper on Appendicular Colic, by T. R. Jessop, in *British Med. Jour.*, March 24, 1894, having an expanded distal end and strictured near cæcum.

Case VII. W. C,, æt 11. Operated April 9th, at St. Francis Hospital. Patient just recovered from a severe attack, which lasted for two weeks and almost proved fatal. There were all the characteristic symptoms of appendicitis, pain, tenderness and vomiting, local induration, constipation and high fever. Parents hesitated to have operation, till slight recurrence convinced them of danger and they removed him from the country to hospital.

At the operation found induration and adhesions to parietes, and much matting together of parts. Found no abscess and failed to find appendix. I drained freely and for some time. Boy has been well since, has no pains and bowels regular and health perfect. In this case had operation been done at onset a dangerous illness would have been averted. The operation probably would have been easily completed and the uncertainty of present imperfect operation avoided.

Case VIII. E. J. K., æt 38. Operated June 15th, 1894 ; went home July 4th. Has had repeated attacks. One two years ago, and one previous to that very severe. For the past two years has had to exercise great care of bowels to prevent relapses and was hardly ever free from pain and tenderness.

Appendix easily reached. It was quite slender and 3 inches long. It was free from evidence of inflammation about it, except a few very slight adhesions on under surface. After removal stump was buried by three sutures. Appendix—Lumen obliterated for about 2.5 c.m. at distal end, its place being marked by a slightly pigmented cicatricial cord ; 1.5 c.m. of proximal end in same condition. Lumen, in central part not dis-

tended. Mucosa, normal in appearance, and a few drops of thin straw colored fluid present. This was a good example of appendicitis obliterans, and I think in time would have undoubtedly ceased to give any further trouble. But until operation, we could not judge of condition except by symptoms; and these were such as to be a cause of pain and anxiety to the patient, as well as a bar to life insurance in an otherwise perfectly healthy man.

These cases demonstrate as fully as a few cases can (and they are fairly representative of nearly all cases of appendicitis) when we should operate and why we should operate.

When to operate.—Just as soon as a diagnosis of appendicitis can possibly be made with certainty.

Dr. J. B. Murphy (see paper read before Pan-American Medical Congress), says: Operate when we have present these cardinal symptoms:

1. Sudden attack of pain over appendix.
2. Local tenderness in position of appendix.
3. Always nausea and sometimes vomiting.
4. Elevation of temperature.

Wyeth says it would be better for exploratory laparotomy to be done in every instance within the first twenty-four hours of the disease—provided a good clean surgeon is procurable.

Why operate?—Because thereby many lives are saved that would otherwise be lost. It is estimated by the best authorities that from 27 per cent. to 30 per cent. of cases treated expectantly die sooner or later of this disease. It is as yet impossible to give the mortality in operated cases, except for individual operators. Mortality in Dr. Murphy's 141 cases was 11 per cent. Some operators report a lower death rate, others much higher. Statistics in operated cases are as yet of little value, as in so many cases, operation is resorted to only when the trust-in-Providence treatment has already placed the case beyond hope. They, however, prove that even now the operative treatment is much the more successful. And granting the advisability of operating early and given a competent operator, the mortality should be as low, as, or lower, than for any other

class of cases in which the abdomen is opened for well-defined surgical ends.

Why operate early ?—Matterstock says that more than 50 per cent. of the cases that die without operation of appendicitis, die before the sixth day. Therefore to wait till the sixth day is to lose the possibility of saving 50 per cent. of the cases that require an operation to prevent death by attack.

The earlier we operate, the less inflammation we will find, hence fewer adhesions and other complications. It is easier to locate and remove the appendix ; and we will usually forestall perforation, abscess and peritoneal infection.

Granting the patient will recover, subsequent operation will often be required to prevent relapse, and by early operation we have one convalescence, instead of two, and the patient, his friends and ourselves are saved much anxiety and annoyance.

The timid or " conservative" surgeon may point to cases where recovery has taken place without operation (as do most cases) and there has been no recurrence, or only mild recurrence. How do we know who will be so lucky, or who will have the fatal relapse. In this regard compare cases I., V. and VIII. Case VIII. suffered more in the intervals of relapses and had more relapses than either of the others, yet his was the only one of the three in which operation was not absolutely required. And Dr. Senn, in a paper on Appendicitis Obliterans, concludes that in view of the slowness, danger and uncertainty of the natural process of obliteration of the lumen of the appendix and consequent cure of the disease, we should not depend on it, but in those relapsing cases resort to operation.

In operating, I would like to call attention to the point emphasised by Dr. Shepherd. On opening the abdomen look for anterior, longitudinal band on cæcum, following down which the appendix is found with precision and certainty.

CARCINOMA OF THE LIVER.

By H. W. Blunt, M.D., Granby, Que.

Although carcinoma of the liver is a disease of somewhat frequent occurrence, still the age of my patient, together with other associated peculiarities, goes to make up a case worthy of some little thought and consideration.

Upon May 21st, 1894, I was called for the first time to see Mrs. W., a large fleshy woman, eighty-five years of age. I found the patient lying in bed, and to all appearances quite comfortable and free from pain. Her complaints at this time were anorexia and general weakness.

I was able to obtain the following brief history of the case :— Patient had always enjoyed remarkably good health (with the exception, as she said, of " having wind on her stomach") until about seven months previous to the above date. At this time she began to lose in flesh and strength, and occasionally had slight pains in the right hypochondriac region, but had never mentioned this fact to anyone. Her relatives, who saw her from time to time, noticed that her skin was of a muddy, slightly icteroid hue. Patient's appetite was particularly good, and so continued until about ten days previous to my first visit, when from exhaustion and general weakness she was forced to go to bed. There was no history of alcoholism, syphilis or biliary colic obtainable.

On examination, skin and conjunctivæ intensely jaundiced ; muscles of extremities soft and flabby, with little subcutaneous fat present ; tongue moist and covered with a thin white fur ; pulse 91, temperature 100⅘°F. There was slight tenderness in the right hypochondriac region. The hepatic dulness began at the fifth rib and extended below the costal margin for about 3 inches in the mammary and axillary lines. There was no appreciable enlargement in the median line. The extent of the enlargement could not be estimated by palpation. No pain or tenderness present in epigastric region and no ascites or œdema of the extremities.

Urine scanty, very dark in colour and containing abundance of bile. Stools white and slimy. From this date (May 21st) patient had almost complete anorexia, but was intensely thirsty. She rapidly became weak and exhausted, and pain in the hepatic region soon became a very prominent feature of the disease. The pain was lessened when patient would lie quietly in bed on her right side. The liver gradually enlarged, and its border could be clearly outlined one or two days before death. Pulse ranged from 90–100, and temperature from 99⅘°–101⅕°F. The condition of total obstruction still persisted and patient died on June 5th, just fifteen days after my first visit, and about twenty-five days after she first took her bed.

An autopsy was performed on the following day, 16 hours after death. The abdomen was opened by an incision in the median line through a thick layer of fat. The liver was found moderately enlarged and adherent to the abdominal wall and ribs, but the diaphragm was free. The capsule of the liver was thickened, and there were present numerous round masses, varying from the size of a pea to that of an unshelled almond. These bodies were of a greyish white color, very hard, some projecting from the surface of the liver, while others were imbedded in its substance. The intervening liver tissue was of a deep red colour and of moderate consistency. No gall stones were found.

The stomach was greatly distended, and at the pylorus a hard uniform mass of cartilaginous consistency could be felt and extending into the duodenum for about three inches. The duodenum at this part was adherent to the liver, and bound down to the spinal column and ribs by very strong fibrous bands.

The mesenteric glands were enlarged and hardened.

I must apologize for the incompleteness of this report, due to the fact that I was not permitted to make a thorough and complete ante-mortem or post-mortem examination, and also to the limited data obtainable. I consider the case of interest as demonstrating the occurrence of carcinoma of the liver at very advanced life, together with cancer at the pylorus and duodenum with symptoms latent and ill-defined.

CERVICAL PREGNANCY.*

By R. C. KIRKPATRICK, M.D.,

Demonstrator of Surgery, McGill University, Surgeon to Montreal General Hospital.

By the term cervical pregnancy is meant that condition in which the ovum, instead of remaining in the fundus of the uterus and becoming there implanted, passes into the cervix and develops there. Such a condition naturally results in the premature discharge of the products of conception, and this actually occurs at a period not later than the third month. It is a condition that so rarely occurs, or at least is so rarely recognized, that I venture to report the following case which occurred in my own practice.

Mrs. W. was confined for the first time in July, 1891. The labour was normal in all respects and the recovery good. She is a large, strong woman, well nourished, but not fat. General health good and no history of any previous illness of importance. On March 23rd, 1893, while out shopping, she was taken with violent pain in the lower part of the abdomen, necessitating her return home at once. Shortly after arriving there, hæmorrhage came on and several clots were expelled. When seen she was anæmic and very anxious. She gave a history of having missed two monthly periods and being near the time when the third might be expected.

On vaginal examination, the cervix of the uterus was found much enlarged and elongated, reaching nearly to the orifice of the vagina. The external os readily admitted the forefinger, which immediately encountered what felt like the remains of a placenta, and on removal proved to be so, at least as far as could be determined by examination. Passing further in, a second opening could be felt, but not large enough to admit the finger easily. When the contents of the uterus were removed the cervix contracted to nearly its normal size. The fundus of the uterus could be felt by bimanual examination not to be enlarged to any extent.

* Read before the Montreal Clinical Society, June 9th, 1894.

The clots, which the patient said were expelled at first, had been thrown away, and no remains of a fœtus could be found in the pieces removed by me, hence some doubt may be raised as to whether it was a case of pregnancy at all. The history of the suppression of the menses for two months, the appearance of the mass removed, and the fact that the mass removed had no pedicle, such as one would find in polypus, all point strongly to pregnancy.

Again, the enlargement of the cervical zone of the uterus, and this enlargement subsiding so much on the removal of the contents, coupled with the fact that a second opening, presumably the internal os, could be felt, show that the case was one of cervical pregnancy.

This condition is, in most of the text books, dismissed with a very short notice. Barnes classes it as a form of sub-ectopic gestation, and describes it as the condition " When the ovum is developed in the canal of the cervix uteri. Chavanne narrates a case. It is extremely rare."

Lusk applies the term to a condition in which the placenta remains attached to the fundus, and the ovum is forced down into the cervix by means of uterine action on account of insufficient development of the mucous membrane, the ovum being nourished from the placenta by means of a long pedicle, and being prevented from escaping by a contracted os externum. He does not mention the condition where the ovum develops primarily in the cervix.

Playfair describes the condition, where the pedicle remains attached to the fundus, as one of temporarily arrested abortion. He quotes Thévanet as saying that primary cervical pregnancy may occur, though very rarely.

Montgomery mentions a similar case in the *American Journal of Obstetrics*, 1885, and that is the only report that I can find.

Retrospect Department.

QUARTERLY RETROSPECT OF GYNÆCOLOGY.

PREPARED BY T. JOHNSON-ALLOWAY, M.D.,
Gynæcologist-in-Chief, Montreal General Hospital.

The Limitations of Abdominal Surgery.—The *Annals of Gynæcology* says:—"In a valued communication published in the *Annals*, Dr. Buckmaster calls attention to the tendency which exists at present towards claiming results for abdominal surgery which are rarely obtainable, and which do not fairly represent the present state of the art. He enforces his remarks with the publication of a fatal case in his own practice, thereby setting a laudable example which we sincerely hope will be generally followed. We have no doubt that our *confrère* is entirely right in feeling that it is of the utmost importance for the profession and for the public that a just idea of the limitations, as well as the glories, of abdominal surgery should be inculcated. Unfortunately, at present, the tendency is in the opposite direction. As long as human nature remains as it is there will be a strong temptation to publish brilliant and successful cases, while saying nothing about others which have ended fatally. Wonderful and almost incredible series or "runs" of successful cases are paraded in the journals, and sent out in thousands of reprints to the wondering and possibly incredulous profession; but there is apt to be a depressing silence as to the results of the operation before and after the "run." Now, the natural consequence of this is that a large number of surgeons get the idea that abdominal operations are easy and not very dangerous, and they try to perform them without sufficient training or knowledge of the subject, so that the patient promptly dies, but the case is not reported.

It is, therefore, well to consider some of the conditions and accidents which may occur in spite of the most dexterous, careful, and conscientious surgery, and must always lead to a certain amount of mortality. First comes the finding of

malignant disease of the abdominal organs, or growths, which in our experience is not rare, and cannot always be diagnosticated with sufficient accuracy to contraindicate operation. Next comes a chronic pyæmic condition, where pelvic suppuration is not confined to the uterine appendages, or to the neighbourhood of the appendix, but has burrowed about and formed pockets and sinuses, with or without the presence of tuberculosis. Then allowance must be made for the presence of fatty or amyloid degeneration of important organs, for the weakness caused by hæmorrhages, pain, want of nutrition, old age, etc., for the presence of acute peritonitis, or of irremediable disease, or trauma of the intestine, or of dense and intractable adhesions, and, finally, for the natural proneness of some individuals to sepsis, hæmorrhage, or paralysis of the intestines after operation.

All of these are conditions which no one can avoid who does his duty in operating on all cases which seem to offer any reasonable chance of cure, and the standing wonder of the profession is as to how a very few men seem to be much more fortunate than all others in meeting such serious complications so seldom.

Taking all these facts into consideration, we are inclined to agree with Dr. Buckmaster, in his statement, that an average of 10 per cent. of mortality in abdominal operations of all classes as met with in a mixed hospital and private practice is a fair and moderate one, which does credit to any surgeon. *Some few men by special skill may reduce the percentage* of mortality considerably, particularly when *their practice lies in certain lines of gynæsic surgery*, giving a large proportion of comparatively safe operations, especially when much experience has improved the natural ability of the operator.

We have no doubt however, that, taken as a whole, the percentage of deaths in abdominal operations in this country today *is vastly higher than* 10 *per cent.*, and it would be something dreadful to contemplate were it not that a large number of operators, conscious of their limitations and tender of their "records," decline to operate on a great many cases which really require surgical relief, and thus cause the unhappy patient, after long suffering, when in a wellnigh desperate

condition, to finally apply to *those surgeons who are willing and able to handle such cases.* This process of natural selection, improving the records of the many and injuring those of the few, averages the mortality of all such operations in the hands of different surgeons between 10 and 30 per cent. A few men after they have established a reputation, and have "cleaned up" the bad and neglected cases in their part of the country so that they get cases in good condition from the family physicians of their vicinity, are able *to reduce* the total mortality considerably below 10 *per cent.*; but certainly for medico-legal purposes the standard should not be set as high as 90 per cent. of recoveries, and many estimable gentlemen who are essaying abdominal surgery *with little preparation and less experience* will find that 50 per cent. of mortality will hardly cover the results of their PERNICIOUS activity."

An acknowledgment of the above nature had to come sooner or later so disastrous was the mortality known to be in the United Stetes in abdominal surgery. There are several factors as cause. The first and probably the most prominent, can be laid at the door of the so-called Post Graduate Schools. After a half educated man had been lured into the city to have some fresh gilding put on him, he goes straight to the instrument makers and fits himself out with what he had seen used, and what he was told could be easily used. Then begins the opening of all the unfortunate women in this man's vicinity and then also begins the high mortality. Then again there are only a fraction of pure specialists in the whole country. Every man does gynæsic work—he has had a post graduate course and knows all about it. Again the fatal private house operating adds largely to the mortality. The ease with which the degree in medicine is obtained and the great freedom of the citizen to pose on one of the very numerous Medical Society platforms with his record of many hundreds with *one* death, makes every man feel that he must go and do likewise, or be forever buried in oblivion.

Gonorrhea in Women.—Carry has made extensive researches among prostitutes suffering from vaginal discharges. In only one-third of the number was the gonococcus of Neisser detected. Carry insists that the gonococcus is absolutely specific of gonorrhea. It is very easy to recognize. In four out of five

cases its seat was found to be the urethra, in one in five the cervix. The peri-urethal follicles, Cowper's glands, the vagina, and anus are exceptional seats of the gonococcus. Gonorrheal urethritis in women is the almost exclusive cause of gonorrhea in man, and the absence of discharge, pain, and local tenderness all tend to hide the source of contagion.—(*Lyon Médical.*)

Hysterical Menorrhagia.—RIGAL says that there are many more cases of simple menorrhagia due to hysteria than is generally supposed. In these cases the patients are perfectly well during the interval. Examination during the attack reveals intense congestion of the uterus and ovaries, and in some cases the ovaries are easily palpated. The symptoms may be very severe—great pain, convulsions, and profuse hemorrhage. These patients recover very rapidly after an attack, and nothing remains of the congestive condition. Such cases occur mostly in young, highly emotional women.

Amenorrhœa and Corpulence.—LOMER described before the Hamburg Obstetrical Society a case of extreme obesity following amenorrhœa. The patient had become exhausted by prolonged lactation. She gained fifty pounds in a year, and was so fat she could scarcely walk. She suffered badly from vertigo, flushings and epistaxis The cervix was scarified; all the symptoms, especially the epistaxis, disappeared; and the patient diminished in weight. Kirch, it was pointed out, has already practised abstraction of blood in the treatment of excessive corpulence.

To Amateurs in Laparotomy.—Dr. F. BYRON ROBINSON offers the following practical selections to laparotomists:

1. Remember it is criminal to learn to do laparotomy on a patient.

2. Do not attempt to do laparotomies in private houses and with no nurses.

3. Before doing any laparotomy be sure to study under a master, and assist him, if possible, so that you can see the pathology in the abdomen and how he removes it. Ask him to allow you to tie a knot once in a while. Never lose the chance of assisting in or witnessing a laparotomy.

4. Learn the after treatment. Half the battle is with the intestines.

5. Study carefully the abdominal and pelvic viscera of the

cadaver. Study as many cadavers as you can. Never lose the chance of doing a *post-mortem* or attending one. Study the dog's viscera.

6. Be sure to make systematic experiments on dogs' abdominal viscera. Always do the autopsies on your dogs' yourself.—(*Medical Age.*)

The Vaginal Route as compared with the Abdominal for the Removal of Pelvic Viscera.—ENGELMANN (St. Louis) calls attention to the many advantages of the vaginal route, even in suppurative cases with multiple pus centres. In fact, in extreme cases, which often cannot be completed by laparotomy, he regards the vaginal route as preferable, if not imperative, and relegates laparotomy to simple non-adherent cases, admissible in suppurative forms only if unilateral or if distinct enucleable centres exist. While vaginal hysterectomy was done by Dubourg of New Orleans in 1846, it was forgotten until a few years ago, when it was revived by the labours of Péan, to whom we must accord the credit of placing vaginal hysterectomy for malignant disease among recognized surgical operations. By his forci-pressure methods he made possible the removal of large tumours by segmentation or morcellement, and it was found that the appendages were easily reached, and with them pus centres and inflammatory deposits, that intestinal injury and shock were avoided, that drainage was perfect and recovery rapid. While French surgeons have done much work in this direction, the operation as yet has not found much support in other countries. The best work has been done by Jacobs of Brussels, who has lost only 2 cases out of 125, most of them difficult and desperate. The leading operators who use vaginal extirpation by morcellement resort to it for malignant disease, fibroid growths, bilateral suppuration, salpingo-ovaritis, and general circumuterine and pelvic suppuration.

Dr. Jacobs prefers the vaginal method for certain cases in which the appendages on one side only are to be removed. Péan limits the hysterectomy by morcellement to benign growths, and to all cases of pelvic suppuration treated to-day by laparotomy, while Ségond still prefers laparotomy when operation is indicated in unilateral cases; above all, unilateral salpingo-ovaritis when non-suppurative.

The operation is that of vaginal hysterectomy, hemostasis being obtained by multiple forci-pressure; and the guiding principle is not to cut without having seen and without having previously clamped in advance of the proposed incision. By substituting forci-pressure for the ligature rapidity of operating is obtained. Diseased or greatly enlarged uteri and tumours are removed piece by piece with practically no loss of blood, for each piece before being removed is properly guarded by forceps and grasped with the strong vulsellum above the point of the knife until the whole mass is removed, be it even a fibroid reaching to the umbilicus. Inflammatory masses in the pelvis are treated in the same way. Such pus sacs as can be removed entire are so removed, while others are merely opened and drained. But strong emphasis is laid on the fact that it is perfectly safe to leave such parts as cannot be liberated or cut away, owing to the perfect drainage caused by the removal of what does yield.

The advantages of the vaginal route are: proximity of the parts to the eye and hand of operator; the rapidity of operation; the absence of hemorrhage by the application of forci-pressure before section; the avoidance of the peritoneal cavity proper to a more or less marked extent. To this is due the absence of shock that is claimed for these operations. There is perfect drainage by the forceps and the dressing. Recovery appears to be more rapid than after laparotomies. There is no external scar and no danger of hernia. The forceps are removed in forty-eight hours, the patient sits up on the fifth or sixth day, and cicatrization is complete on the tenth to fourteenth day. As the intestines are not likely to come into view, injuries to them are rare, but if such occur they can be remedied quite as easily as in the abdominal operation.

The expert can remove tumors extending as high as the umbilicus by this route; but for others it is the operation of choice for bilateral pyosalpinx where foci often remain in the endometrium or in the stumps of the tubes.

In concluding E. urges that a trial of this method be given, but warns his confières that the operation should not be attempted without the long and short retractors that are necessary.—(*Annals of Gyn. and Ped.*, February, 1894.)

The Ligature of the Uterine Arteries in Myoma of the Uterus.

—Otto Kuestner (*Ctrlbl. fur Gyn.*, 1893, No. 33) was stimulated by Gottschalk's article to publish his observations sooner than he would have done otherwise. In his first case he intended doing a total extirpation *per vaginam* but after tying off the greater part of both broad ligaments the operation had to be given up, as it was found impracticable. The uterus contained a fibroid the size of a fist in its posterior wall, giving rise to profuse hæmorrhages. When the patient was examined, seven weeks after the operation, the uterus was found about the normal size. The hæmorrhages had ceased a few days after the operation.

In the second case the patient had been suffering from profuse hæmorrhages for over six years. Curettage on two different occasions had no effect upon the hæmorrhage. The uterine arteries were ligated February 12, 1893. The uterus at this time measured twelve centimetres. On March 15th, the uterus measured only six centimetres and a half and the hæmorrhages had ceased. In the third case the same good results were obtained by the operation. Kûstner makes a circular incision around the portio vaginalis and ligates the uterine arteries directly. He thinks the operation suitable not only for myoma but for those rebellious cases of metritis attended with profuse hæmorrhages.

Uterine Hæmorrhage in Scurvy.—A. Goldberg (*Centrlbl. fur Gyn.*, 1893, No. 50) gives the history of a case of profuse uterine hæmorrhage attended with petechiæ all over the body and which upon closer investigation showed that the woman was the subject of scurvy. The hæmorrhage was first looked upon as due to an abortion but a further examination of the woman and her antecedents resulted in a diagnosis of the aforesaid disease. The woman was cured by a treatment directed to her general condition.

Ligation of the Uterine Arteries in Myoma Uteri.—Dr. S. Gottschalk (*Ctrlbl. fur Gyn.*, 1893, No. 39) describes the technique he follows. He ligates the arteries in the same way as he would in vaginal hysterectomy. The vaginal mucous membrane is incised and three ligatures one over the other are applied so that the lower part of the broad ligament is embraced. Silk is used for the ligatures and the mucous mem-

brane is closed over them. In order to avoid injuring the bladder he has always separated it from the uterus though he admits this may be unnecessary. His experience thus far covers seven cases, the last two being operated upon only two months ago. In both of these cases the myoma was the size of a small fist and caused profuse hæmorrhages. These have ceased as well as the other symptoms that had been present. The other five cases had been operated upon within from four to fifteen months. In two a complete cure had taken place, as the growth as well as the symptoms had disappeared. In the other three cases a shrinking of the growth had occurred. In some cases he combines a curettage with the ligation and follows up the operation with a course of ergot. He considers with Küstner that the operation is indicated in concentric hypertrophy of the uterus and in obstinate metrorrhagia of the climacteric.

On the Action of Salicylic Acid on the Uterus.—C. BINZ (*Berl. klin. Woch.*. 1893, No. 41) made a number of experiments on guinea-pigs to discover whether salicylic acid has any tendency to produce abortion, as has been asserted by some observers. In the eighteen experiments eight guinea-pigs aborted, but of these three received such large doses as to cause toxic symptoms, hence they must be excluded. In the other five there seems some doubt as to the abortion being due to the drug. Still the author deduces the following conclusions from his experiments and from the literature on the subject :

1. Salicylic acid is worthy of trial in painful, delayed or scanty menstruation.

2. It should be given with caution in pregnant women who have a tendeney to abort and in women with tendency to menorrhagia.

Indications, Technique and Results of Operations on the Annexa. —SCHAUTA (Germ. Gyn. Congress, Breslau, May, 1893, *Ctrlbl. fur Gyn.*, 1893, No. 22) expresses himself as follows :

1. Out of 6,315 cured cases [*sic*] coming under his own observation, 1,130 (17.8 per cent.) had inflammatory affections of the annexa.

2. A permanent return to the normal condition is not to be

expected when the tube has reached the size of a finger by inflammatory process..

3. The diagnosis of the contents of the tube (whether it is sterile, contains gonococci, streptococci, or staphylococci) can not be determined before the operation either by the history or temperature curve.

4. Fever may occur when the contents are sterile, or there may be an afebrile course before the operation even when the contents are pathogenic.

5. An operation is indicated when the tube has the thickness of a finger and when severe symptoms are present, and under all conditions when the presence of pus has been substantiated.

6. The bacteriological examination of the contents of the tube during the operation is of importance regarding the technique.

7. The operation is done in the usual way with pelvic elevation, when the tube is of moderate size and no pus in seen during the operation.

8. In large tumours the contents are bacteriologically examined. If these contain gonococci only, the sac is opened washed out and then removed entirè. If streptococci or staphylococci be preseut, the operation for the time being is end ed. In four or five days, when peritoneal adhesions have shut it off, the sac is opened and drained.

9. In very large tumours lying close to the vagina an opening is made through it, but generally the abdominal route is be preferred.

10. In pus sacs of moderate size (the size of an egg or orange) cœliotomy is done, exercising great care not to rupture the sac. Should this, however, occur, the escaped pus is at once bacteriologically examined. If this be sterile or contain gonococci, the operation is concluded in the usual way and the abdomen closed. But if it contain streptococci or straphylococci, Douglas's space, with which the pus came into contact, is drained.

11. The drainage of Douglas's space serves to remove the secretions and to close off in a short time the remainder of the peritoneal cavity.

12. The total mortality, from February, 1887, to April,

1893, in two hundred and sixteen operated cases was thirteen —*i. e.*, six per cen'. Of these thirteen two died of pneumonia.

13. The mortality of the cases in which the the tubal contents were not purulent or were sterile was 2.8 per cent., of those in which gonococci were present it was 9 per cent., and of those in which streptococci or staphylococci were present it was 20 per ceut. Of the latter the mortality of the drained cases was 16.6 per cent. Of the not drained cases it was 40 per cent.

14. Regarding the permanent results of the operation, he had under observation one hundred and twenty-one cases. One hundred of these were free of all symptoms. In seventeen there was marked improvement and in four the former symptoms persisted.

Reviews and Notices of Books.

A Manual of Therapeutics. By A. A. Stevens, A.M., M.D., Lecturer on Terminology and Instructor in Physical Diagnosis in the University of Pennsylvania; Demonstrator of Pathology in the Woman's Medical College, Philadelphia; Physician to St. Mary's Hospital and to the South Eastern Dispensary; Pathologist to St. Agnes's Hospital. Philadelphia: W. B. Saunders, 1894; pp. 435; price, $2.25.

This little work is prepared especially for the use of students as an outline of their work in this department, and a guide to their study of the larger text-books. The arrangement is in alphabetical order, and Latin titles are used throughout. It contains first a chapter on the physiological action of drugs, then the various drugs are described individually, with their actions and uses. A third part of the work is taken up by the consideration of such remedial agents as cold, counter-irritation, electricity, antiseptics and disinfection, etc. Next we have applied therapeutics, and finally a short chapter on incompatability. This last chapter is particularly good, as it deals with the principles governing the subject, rather than endeavouring to give a list of the drugs which should not be prescribed together. It is a useful book, and contains much information in a small compass.

Anatomischer Atlas der Geburtshilflichen Diagnostik and Therapie, mit 145 Abbildungen, Von Dr. Oscar Schaefer. Lehmann's Medicin Hand-Atlanten, Band ii, Geburstshilfe ii Theil. Munchen, J. F. Lehmann, 1894;

This is the second volume of an atlas which is intended to cover the whole ground of medicine and surgery and their special branches, the whole to be complete in seventeen volumes. The present volume is the second part of that portion of the work devoted to midwifery. It deals with the morphology of the female organs, physiology and pathology of pregnancy

and child birth. The diagrams and plates are carefully selected and executed, and the letter press concise and clear. To those who can read German, this atlas will be useful, the small size and reasonable price of the volumes being a special recommendation.

Report of the sanitary state of the City of Montreal for the year 1892. By LOUIS LABERGE, M.D., Medical Health Officer.

In this report the precautions taken during the period when an epidemic of cholera was threatening are related. At that time the sewerage system of the city was inspected, and the health board learned from the City Surveyor that the lateral sewers recently built had been constructed without regard to the general system; that numerous dead ends existed; that there were 7 or 8 miles of streets without sewers; that there were 28 miles of streets with sewers in bad condition; that deposits exist temporarily in many of the sewers, and that the temperature in the sewers is about 70° Fahrenheit.

Upon the recommendation of the Montreal Medico-Chirurgical Society, a sanitary engineer was added to the permanent staff of the department.

During the year, 195 privy pits were abolished after the localities had been cleared and disinfected, 697 water closets were put in houses, 4452 complaints concerning general nuisances and 1617 complaints against the scavengers were received and investigated. The sanitary police, ten in number, made during the year 58,201 visits. 9173 nuisances were detected, and 9045 nuisances were abated. That much still remains to be done in the way of abolishing privy pits may be seen by the fact that 183,655 cubic feet of night soil were removed during 1892. We are accustomed to grumble a good deal at our health department but the facts just quoted show that there is a great deal of work to be done.

Voluntary stamping of meat for butchers willing to allow it, was begun at 10 p.m., on November 9th, the order being countermanded the following day at 10 a.m. As the carcases of 515 animals were stamped during that brief period one wonders why the order was rescinded.

Of the vital statistics, which are given in full, we will only

mention here that the births recorded were 9454 as compared with 9576 for 1891. The deaths during the year were 5507 as compared with 5391 in 1891. 4094 vaccinations were reported by the public vaccinators and 917 by family physicians, and 562 infants who died before vaccination. Debility is credited with causing 602 deaths, or more than any other individual cause, while only 39 deaths are stated to have occurred from unknown causes. Of the other chief causes:—phthisis 532, encephalitis (including meningitis and all inflammatory conditions of the brain) 332, pneumonia 347, bronchitis 253, diarrhœa 393, cholera infantum 300, enteritis 286 were the most frequently.

It is noticeable that 540 deaths or 10 per cent. of the total for the year occurred among the infants in maternity hospitals and foundling asylums, a fact which would indicate the advisability of these institutions being placed under public supervision.

Among the infectious diseases 134 deaths are ascribed to whooping cough, 33 to measles, 14 to scarletina, 54 to diptheria, and 56 to croup, 50 to typhoid (as compared with 65 in 1891 and 101 in 1887.) We have not quoted the death rates given as the true population of Montreal is a very debatable matter.

The expenditure for the department during the year was $84,446.

Bibliography.

Non Nocere. By A. Jacobi, M.D., New York. Reprinted from the *Medical Record*, May 19, 1894.

Remarks upon Appendicitis Based upon a Personal Experience of 181 Cases. By Maurice H. Richardson. M.D., of Boston. Revised and corrected from *The American Journal of the Medical Sciences*, January, 1894, with 213 tabulated cases.

Bone Operations for the Correction of Club-Foot, Based upon an Analysis of 435 Operations by 108 Operators. By H. Augustus Wilson, M.D., Philadelphia. Reprinted from the Transactions of the American Orthopedic Association, September, 1893.

The Sewerage System of New Orleans. From the New Orleans *Times-Democrat*, April 19, 1894.

De L'Hydronephrose Intermittente par le Docteur Lucas-Championnière, Paris. Extrait du *Journal de Médecine et de Chirurgie pratiques*, 25 aout, 1892.

Modification du Taux de L'Uree Dans L'Urine par le Docteur Just Championnière, Paris. Extrait du *Journal de Médecine et la Chirurgie pratiques*, 25 juillet 1893.

Sur la Cure Radicale des Hernies par le Dr. Just Lucas-Championnière, Paris. Extrait du *Journal de Médecine et de Chirurgie pratiques*, 25 novembre 1893.

Rotura de la Uretra por Estrechez. Por el Dr. Ramon Martin Gil, Barcelona, 1894.

Canadian Medical Literature.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian works published in other countries) for notice in this department of the JOURNAL.]

PERIODICALS—MAY, 1894.

CANADA MEDICAL RECORD

Galvano-cautery current obtained from the street current.—A. Lapthorn Smith, p. 172.

JUNE, 1894.

CANADA LANCET.

Vaginal hysterectomy for cancer.—J. A. Temple, p. 295.

CANADIAN PRACTITIONER.

(1.) Address in Medicine before the Ontario Medical Association,—J. E. Graham, p. 399.

(2.) Three cases of McGill's operation for prostatectomy.—A. McKinnon, p. 410.

(3.) A Note on the therapeutics of diuretin.—A. McPhedran, 416.

(4.) Pyæmic infection of the base of the brain, secondary to deep abscess of the neck.—Wm. Oldwright, p. 432.

(5.) A case of cancer of the heart.—Hibbert Hill, p. 435.

DOMINION MEDICAL MONTHLY.

President's address at the meeting of the Ontario Medical Association.—L. McFarlane, p. 163.

(6.) Physiotherapy first.—Edward Playter, p. 171.

Professional privilege and the law of evidence.—W. Seton Gordon, p. 169.

ONTARIO MEDICAL JOURNAL.

Proceedings at the meeting of the Ontario Medical Council.—p. 384.

CANADA MEDICAL RECORD.

(7.) Medical evidence.—Robert Mark, p. 193.

(1.) Dr. Graham, urges the necessity of greater care in the diagnosis of chronic diseases, and especially that we should never rest content with discovering the nature of the ailment without discovering its cause. Two cases of gastric dilatation are cited where a diet of scraped beef, toast and milk was ordered in both instances, with lavage of the stomach and small doses of strychnine. One of the cases rapidly improved while the other was made worse, and in the latter upon analysis of

the stomach contents, pepsin was found deficient and hydrochloric acid absent. By giving peptonized milk and farinaceous foods much better results were obtained. Here the dilatation was only a secondary consideration. In suspected tuberculosis the necessity of frequent and repeated examination of the sputum is insisted on. In three cases of anæmia, the cause was found out and obviated in these with excellent results; in the fourth no improvement followed as the cause was not discoverable.

(2.) In three cases of supra-pubic prostatectomy excellent results were obtained, the general condition improving and the necessity for catheterization being done away with.

(3.) Dr. McPhedran records six cases in which temporary benefit resulted from the use of diuretin, which consists of throbromim, 49 per cent. and sodium salicylate 38 per cent. Case one, was of arterio-capillary fibrosis with asthma; cases two and three were arterio-sclerosis with dilatation and hypertrophy of the heart; case four of mitral incompetency and case five emphysema and asthma. As a rule when the symptoms recurred, a second recourse to the drug was found useless.

(4.) Dr. Oldwright's case occurred in a man of 58, who presented symptoms of retro-pharyngeal abscess which was incised behind the sterno-mastoid, the infection was found post-mortem to have followed the course of the internal jugular vein.

(5.) In Dr. Hill's case the cancer was secondary to a scirrhus growth in the rectum. There were no cardiac symptoms. At the autopsy the cancer was found to infiltrate the bladder and rectum with secondary nodules in the peritoneum, abdominal lymph, glands and liver. Numerous small white cancerous nodules the size of pin heads were found in the substance of both venticular walls and beneath the epicardium and endocardium of the right ventricle (infection apparently having taken place by the growth extending into one of the pelvic veins?)

(6.) Dr. Playter's paper has been already published in full in the May number of this Journal.

(7.) Dr. Mark communicates results of medical examination

in a case where a conviction was obtained in the criminal courts for the rape and murder of two little girls aged 12 and 14 respectively. (The L'Orignal case). Besides some lacerations about the heads and faces there were deep red discolourations about the wind pipe on both sides, apparently corresponding to the imprints of the fingers, appearing as if the right hand alone had been employed in one case and the left hand alone in the other. The hyoid bone was broken. The conjunctivæ and tongues were suffused, the brain and lungs congested and right heart full of blood. The stomach, bowels, kidneys, bladder, ovaries and uterus were normal. The external genitals were much lacerated and the vagina was partially ruptured in the one case, and a complete perforation 1 in., in diameter situated posteriorly was found in the other. In the vagina not perforated spermatozoa were detected. The hands of the younger girl were severely wounded, the injuries being such as could have been inflicted by strong and long finger nails. Examination of the accused showed the nails to be long and chisel like, and a cast of them was at once made. The mutilated hands and the genitals were preserved in spirit and exhibited at the trial, together with photographs of the injuries.

The details of this interesting case do not, however, form the real objective point of Dr. Mark's paper, which is intended also to show the nature of medical expert evidence and how it should be given. He explains at the beginning that "ordinary witnesses are only required to state facts of which they have a personal knowledge, but upon skilled and scientific witnesses weightier responsibilities rest; their opinions are often demanded to elucidate matters that are obscure to the ordinary mind." As an instance of how this should be done the author quotes as follows from the record of the trial: "The learned counsel asked me: 'Do you swear these girls died from asphyxia?' I replied 'No, my learned friend. I presume you vie with me in an admiration of the work by Tidy on Medical Jurisprudence, in which he wisely and truly remarks: '*We begin to die at the head, or we begin to die at the heart, or we begin to die at the lungs*,' and the McGonigle girls

from the injuries inflicted on their throats began to die at the lungs, and in about twenty or thirty minutes died at the heart; the primary cause of their death was asphyxia, but mental and physical shock tended to produce death in the brain and heart.' "

TOXINES IN CHOLERA.

F. F. Westbrook, M.D.,

Contributions à l'étude des toxines du cholera, Annales de l'Institut Pasteur. Vol. VIII., p. 818. 1894.

The investigations that have been made since 1887 into the pathological chemistry of infectious diseases, while throwing a new, not to say a lurid, light upon the mode of action of the pathogenic bacteria have at the same time, from a chemical stand point, rendered confusion worse confounded. It seems but a little while since Brieger published his brilliant demonstration of the toxic powers of certain alkaloids—ptomaines—obtained from tissues, the tissues of affected animals, or again from cultures of pathogenic bacteria, and we were all ready to look upon ptomaines as the essential agents in the production of many of the symptoms of zymotic diseases. Next Leber and Christmas described toxic bodies having proteid reactions, obtainable from cultures of pyogenic microbes, and Hankin went further and isolated a toxic albumose from cultures of the anthrax bacilli—an observation made use of by Brieger and Frankel to isolate a series of albumose, or, as they termed them, toxalbumines, from a long series of growths of pathogenic microbes. As a result, the doctrine of toxalbumines rapidly replaced the doctrine of ptomaines, notwithstanding the fact that a note of warning had already been sounded by Roux and Yersin in their remarkable studies upon diphtheria. These last observers pointed out that the toxic body isolated by them was found in such infinitesimal quantities, and possessed such characteristic properties, that on the whole it must be regarded as one of the order of ferments. Not to pursue the further studies in detail, it may be said that some observers have found albumoses or peptones, others globulines, others again, like Sidney Martin, indications of both albumoses and ferments, and

these bodies have been discovered not only among the products of the metabolism of pathogenic microbes cultivated in various media, but also in the tissues of animals affected by one or other disease.

Nor does this represent the full picture of our present confusion—for various thoroughly reliable observers, working with the same microbe, but with different culture media, have obtained bodies having similar toxic characters but diverse chemical reactions.

This confusion led Duclaux, so long ago as 1890, to suggest that the peptones, albumoses and other proteid-like bodies described by various observers were not the true toxines, and he suggested that the true toxines, whatever be their nature, were mechanically carried down in the process of precipitation by the alcohol, sulphate of magnesium, or whatever other precipitant had been employed, but though the condition of affairs has been becoming more and more chaotic since this suggestion was made, no one had, until Wesbrook, seriously attempted to work out the cause of the divergencies of the various investigators along what clearly are the only satisfactory lines.

To this end Wesbrook employed the cholera spirillum. The toxines produced by growths of this organism have been variously described as peptones, globulins, albumoses and alkaloids. Instead of employing one method of culture, Wesbrook made growths in several different media, eggs (Hueppe's method), alkali-albumine devoid of peptones, (Sydney Martin's method), peptone solutions, solutions of aspariginate of sodium (Uschinsky's method). After the spirilla had been grown in these media for several days, he made chemical analyses of the fluids, and as the result of a long series of observations he arrived at the following conclusions :

I. That the substances obtained from the cultures in the different media have not the same chemical constitution.

II. That cultures in eggs give a mixture of proteid matters which it is not possible to separate ; cultures in alkali-albumine, a deutero-albumose, traces of proto-albumose and variable

quantities of (?) alkali-albumine; cultures on aspariginate of sodium, a substance which gives a feeble xanthoproteic reaction (proteid) but no biuret reaction (albumose and peptone).

III. That the peritoneal fluid of guinea pigs inoculated with the cholera spirilla gives only a slight xanthoproteic reaction and contains neither proto-nor deutero-albumose.

IV. That all these substances, while evidently differing chemically, are similar in their physiological effects. All of them can cause death, preceded by like symptoms, or given in smaller doses can confer immunity.

V. That the only conclusions to be drawn from these results are :—Either that the cholera spirillum produces different toxines, according to the medium of culture, a theory that is extremely improbable, or that the toxine is a constant and uniform substance, associated with the proteid materials contained or formed in the medium of culture.

VI. In favour of this latter view is the fact that the material obtained from the solutions of aspariginate of sodium, a medium almost completely free from proteid matter, is a toxine which gives no reaction which allies it to albumoses, peptones, globulins or alkaloids, and yet this toxine is physiologically peculiarly powerful.

It will be seen, therefore, that Wesbrook's researches tend to confirm Duclaux's opinion, to which we have referred above, according to which the substances so often spoken of as tox-albumines are mechanical mixtures of albuminous bodies with toxines rather than true chemical compounds.

Dr. Wesbrook is a graduate of the University of Manitoba, whose good work in bacteriology has already resulted in his being elected John Lucas Walker student in Pathology of the University of Cambridge. It is a pleasant duty to record so sound and useful a research accomplished by a Canadian investigator.

Society Proceedings.

THE MONTREAL CLINICAL SOCIETY.

Stated Meeting, March 3rd, 1894.

JAMES JACK, M.D., PRESIDENT, IN THE CHAIR.

Notes on the General Surgery of Felons.—Dr. HACKETT classified inflammation of the fingers as follows:—(*a.*) Dermatitis; (*b.*) cellulitis of the finger; (*c.*) suppurative thecitis; (*d.*) periostitis or osteitis of the phalanges; (*e.*) paronychia.

These different conditions were described and their surgical treatment fully considered. In simple cellulitis care should be taken not to incise too deeply, for there is danger of carrying infection by this means into the deeper tissues.

Hydrogen peroxide was recommended as being extremely valuable as a wash after free incision in suppurative thecitis.

Dr. CAMPBELL felt that Dr. Hackett had presented his subject very clearly, and the members present could not fail to have a better idea of the diagnosis in cases of inflammation of the fingers. He also referred to the marked constitutional effects noticed in many of these cases.

Breath Pictures or Pneumotypes.—Dr. H. D. HAMILTON presented several pneumotypes, taken after the method of Sandmann, of Berlin.

The patient is directed to breath through the nostrils on to a piece of slate cloth, on the surface of which the moisture of the breath congeals. A dry powder is then dusted over this, fixing the picture.

By this method obstruction of one or the other nostril is recorded.

The meeting then discussed several matters of business.

Stated Meeting, March 17th, 1894.

DR. LOCKHART IN THE CHAIR.

Dr. Binmore was elected a member of the Society.

Hemiplegia in a Child of Two Years of Age.—Dr. SCHMIDT presented a case report under the above title.

The patient when first seen was noticed to be breathing heavily. Ptosis of the right lid, immobility of the right eyeball and of the left arm and leg were noticed. Pupils equal, tongue coated, heart normal. Temp. 102°, Some evidences of rachitis. Six days later ptosis of both eyelids was marked, the child had slight convulsive seizures and then died. Dr. Schmidt considered the condition due to thrombosis.

Dr. CAMPBELL thought the symptoms, as related, pointed more to tuberculosis.

Dr. ORR considered the lesion was situated in the medulla and that it was tubercular in character.

Dr. CAMPBELL mentioned a case he had recently seen of unilateral convulsions in a child where the opposite side was flaccid, but the reflexes somewhat exaggerated during the convulsive stage. After the convulsion ceased the reflexes on the flaccid side, previously exaggerated, were absent, but those on the side convulsed, were markedly exaggerated. An explanation of the condition was hard to find.

Drs. CAMPBELL and KENNETH CAMERON then presented a series of pulse tracings taken with Marey's and Dudgeon's sphygmographs. The tracings showed very satisfactorily the effect of forced respiration, asphyxia, inspiration of ether, and nitrite of amyl on the pulse.

The tracings with Dudgeon's instrument were noticed to vary with the tightness of the strap binding it in place.

Dr. LOCKHART then related a case which had recently come under his observation. The patient, a male, aged 42, had come up from business feeling unwell, and when seen was found unconscious. There were no signs of paralysis, temp. 103°.

Ice was applied to the head. One drop of croton oil and an ounce of Mag. Sulph. failed to move the bowels. No albumen or sugar found in the urine. Death took place three days later, being preceded by convulsive seizures.

Dr. KIRKPATRICK mentioned having seen a somewhat similar case in the Montreal General Hospital. Post mortem intense cerebral congestion was noted.

Stated Meeting, March 31st, 1894.

JAMES JACK, M.D., PRESIDENT, IN THE CHAIR.

Fibro Neuroma.—Dr. GEO. BROWN showed a small fibrous tumour he had removed from a patient's hand. Two years ago the patient had lost the middle finger of the left hand as a result of a suppurative thecitis. A very painful spot appeared just at the side of the incision some months later which rendered the hand almost useless.

Treatment in Scarlet Fever.—Dr. ED. BLACKADER read an interesting paper under the above heading. The use of iron, quinine, ammon. carb., liq. ammon. acet., digitalis and strychnia in the different phases of the disease was considered. Special stress was laid upon the value of iron and small doses of pot. chlorate at frequent intervals.

Locally as a spray, any alkaline solution was valuable, supplemented by frequent painting with a solution of iron and pot. chlor. in glycerine. Peroxide of hydrogen, listerine and carbolic acid applied to the throat were of value. Basham's mixture was of signal value in cases with renal complications.

Dr. CAMERON considered pot. chlor. a harmful drug in this disease, as it tended to irritate the kidneys. Hydrogen peroxide applied to the throat had been of great service in his experience, but it must be of good quality and not too acid.

Dr. KIRKPATRICK had not found pot. chlor. of much value in his experience. He considered the main points in treatment were milk diet, the avoidance of cold and the

early antiseptic treatment of the nose and throat, hydrogen peroxide being the most valuable for this purpose.

Dr. ALLAN had met with cases where the milk supply had been the carrier of infection.

Dr. GEO. BROWN thought the use of the swab and brush dangerous, as the pharynx was often eroded by too vigorous swabbing. Sprays or gargles being free from this danger, he considered to be better. Mentioned two cases where hyperpyrexia had been the cause of death, no treatment having proved effectual in reducing the temperature

Dr. CAMPBELL referred to value of Peroxide of Hydrogen. He mentioned a case where Basham's mixture appeared to have been the cause of hæmaturia. Applications of oil to the skin he had found of little value as the oil dried so rapidly or else was rubbed off.

Dr. REID spoke of the value of free stimulation in hyperpyrexia.

Dr. JACK considered lanoline mixed with glycerine and applied thickly, of particular value in the treatment of the skin.

A Case of Apex Pneumonia.—Dr. GEO. BROWN related the report of a case of apex pneumonia. The delirium had been very marked. The pulse and respiration ratio led him to diagnose pneumonia, five days before any physical signs were manifest.

Dr. ORR referred to the frequency of apex pneumonia in children and to the value of pulse respiration ratio in diagnosis even in absence of physical signs.

Dr. CAMPBELL mentioned the case of a child of two years of age where the pulse respiration ratio was affected eight days before the dulness was apparent.

Stated Meeting, April 14th, 1894.

JAMES JACK, M.D., PRESIDENT, IN THE CHAIR,

Locomotor Ataxia with Gastric Crises.—Dr. CAMPBELL presented the patient before the Society. He was a police-

man of middle age and had been the subject of severe gastric pain coming on suddenly at intervals of about a month, and lasting from two to fourteen days. The pain was agonizing and of a griping character, but was always relieved by morphia. There was no ataxia present. Pupils somewhat fixed, left being larger than the right. Tendon reflex absent. Movement of crossing limbs incoordinated. History of syphilis. Had been treated with pot. iod.

Dr. SPRINGLE who had seen the case in private, mentioned that the patient always referred the pain to what he had eaten.

Dr. GUNN considered absolute rest essential in treatment of disease of the cord, and suggested rest in bed with a back splint in this case.

Dr. GUNN then gave an interesting account of the methods adopted in the histological examination of the blood.

Stated Meeting, April 28th, 1894.

JAMES JACK, M.D., PRESIDENT, IN THE CHAIR.

A Case of Erythema.—A report of a case as above was presented by Dr. Orr. A child, aged 15 months, had been ailing for five days before Dr. Orr had been called in. The child was found covered with a profuse eruption of thickly set macules and papules of different sizes, which disappeared on pressure and were of a dull red colour. Temp. was normal. No sore throat nor cough. In three days this rash entirely disappeared. A new rash was then noticed breaking out on the face and neck, beginning as small red papules, rapidly extending and becoming raised and white. This rash was accompanied by much œdema of the face, and was very itchy. The whole disappeared in a few hours from the face, only to break out on the limbs and trunk. Diarrhœa was very troublesome at this time, and a lateral incisor appeared during the attack.

Dr. EVANS mentioned having met with similar cases, and

in many of these condensed milk was the food used. With a change of diet the condition rapidly disappeared.

Dr. MORROW mentioned a very marked case of urticaria œdematosa he had met with in a child of six weeks.

Dr. CAMPBELL mentioned a case where every time the child was exposed to a cold wind, the exposed parts became swollen and red, but without any pitting on pressure.

Dr. EVANS then reported a case of severe hæmorrhage from the site of a recent chancroid.

Dr. GEO. BROWN reported an interesting case of intussusception of the bowel in an infant of eight months, the condition coming on during an attack of severe vomiting. The sausage like tumour could be felt on the left side below the border of the ribs. He injected a pint of warm water into the bowel with the child hanging head down. Suddenly, while gently massaging it, the tumour was felt to give way and the child's symptoms were immediately relieved.

Stated Meeting, May 12th, 1894.

DR. GEO. BROWN IN THE CHAIR.

Renal Atrophy.—Dr. WILLIAMS exhibited a pair of kidneys removed from an old man, the subject of atheroma, who had died of cerebral hæmorrhage. The left kidney was atrophied and surrounded by a dense mass of adipose tissue. The right kidney showed compensatory hypertrophy, being very large indeed. It was in a granular condition. The patient during life had no symptoms pointing to a lesion of the kidneys.

Stated Meeting, May 26th, 1894.

DR. KENNETH CAMERON IN THE CHAIR.

Angina Pectoris.—Dr. MORROW read the report of an interesting case of angina pectoris where the attacks were characterized by expectoration of large quantities of frothy mucus of pinkish color.

Patient used as much as ♏ XXV. of nitrate of amyl in an hour, and it was a question if the frochy mucus was not due to its use.

A condition of general arterio-sclerosis, with incompetency of the aortic valves was present.

Considerable benefit resulted from rest in bed with a course of pot. iod. and arsenic, but the patient finally died while on a spree.

Unusual Pharyngeal Eruption.—Dr. H. D. HAMILTON presented an interesting report of a peculiar case. The patient, a female, aged 45, married for 26 years, complained of blisters forming in the mouth and throat, and of the loss of 42 lbs. in weight in the course of a year.

The mucous membranes were found spotted with yellow-white patches, remains of collapsed bullæ. They could also be seen on the gums, roof of the mouth, the soft palate, uvula, pillars of fauces, tonsils and part of the wall of pharynx. The membrane was red and injected. Sub-maxillary glands enlarged. Vesicles were found on fore-arms ranging in size from pin's head to a fifty cent piece, contents being clear and margins red.

Later these formed all over the body. Disease began in the fall of 1892, new crops of bullæ coming out every week.

At one time mucous casts were noticed in the evacuations from the bowel. Patient very costive. Temperature often slightly elevated in the evening, pulse being small and compressible. The question asked was this a case of pemphigus or dermititis herpetiformis.

Dr CAMPBELL made a few remarks upon the case and was inclined to look upon the case as one of dermatitis herpetiformis.

Stated Meeting, June 9th, 1894.

JAMES JACK, M.D., PRESIDENT, IN THE CHAIR.

Drs. Bazin, Byers, Fisk, Gorrell, Manchester, Kinghorn, and Rimer of the Montreal General Hospital ; Drs. Colvin, Davidson, Fry, Shaw, Mathewson, Nicholls, Robertson and

Cameron of the Royal Victoria Hospital, and Dr. Denny of the Western Hospital were all elected as temporary members.

Tubercular Peritonitis.—Dr. GEORGE BROWN read the report of a very interesting case of tubercular peritonitis. The patient was aged 2½ years, when first seen, and complained of dyspnœa, swelling of the abdomen, a feeling of oppression in the cardiac region, and diarrhœa.

Family history, phthisical, his mother having since died of that disease.

Child was bottle fed and was generally quite healthy up till two years of age.

Illness began with an attack of bronchitis, after which the child gradually failed. Was at first treated for indigestion, but no change taking place in his condition, Dr. Brown came to the conclusion he was dealing with a case of tubercular peritonitis. The abdomen measured 29 inches in circumference. Four weeks later this had been reduced to 22 inches. Death finally resulted some six weeks later from meningitis.

Post-mortem revealed extensive tubercular disease of the intestines which were matted together. The mesenteric glands were enlarged and caseating. The lungs were full of miliary tubercles.

Dr. EVANS then mentioned several cases which he had seen in Great Ormond Street Hospital for sick children, specially calling attention to two cases which marked different types of the disease.

In one, a child of seven years, there was great abdominal distention due to fluid. Patient was frequently tapped, and under good diet, rest, and tonics, improved rapidly until when last seen, after some weeks at the seaside, he appeared cured. In the other case, a child of about three years of age, there was no distention. Patient was greatly emaciated. Intestines could be felt through the abdominal wall to be matted together. In one spot, an inch below the umbilicus, a red area appeared and finally ruptured, dis-

charging fæces. This fistula continued discharging for some weeks until the child's death.

Disease has been frequently traced to cow's milk, so the source of milk used in infant feeding must be kept under close observation.

Dr. ALLAN pointed out how common tubercle in cattle was becoming in this country, and suggested that all milk should be sterelized.

Dr. KIRKPATRICK spoke of the benefit following laparatomy in many cases of tubercular peritonitis.

A Case of Cervical Pregnancy.—Dr. KIRKPATRICK read the report of an interesting case of the above condition. (See page 15 of the JOURNAL.)

Dr. EVANS questioned the diagnosis of cervical pregnancy, and mentioned cases of abortion where he had found a similar condition of the cervix. The product of conception was expelled from the uterus by its contractions, but owing to the external os not dilating, the cervix becomes greatly drawn out and retains the best part of the ovum, while the uterus being now emptied contracts to almost its normal size above.

Dr. BROWN remarked that in abortion the fœtus so frequently came away alone the rest of the ovum following later.

Dr. KIRKPATRICK in reply still held to his diagnosis of cervical pregnancy as the external os was dilated and did not obstruct the expulsion of the placenta to any marked extent. The internal os was contracted and the uterus not enlarged.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, May 18th, 1894.

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

Morphœa.—Dr. GORDON CAMPBELL exhibited a case of this rare skin disease. The patient, a Russian girl about 25 years of age, showed in the left mammary region, an irregular patch of an ivory white colour, having a smooth and almost polished appearance and surrounded by a violet zone. The skin over the affected area was distinctly thickened. The symptoms were a slight tingling and itching on the patch. It had been present for the past nine months, while she has been living three years in this country. This is a very rare affection, only occurring once in several thousand cases of skin diseases, and, as far as he (Dr. Campbell) could learn, it is the first case of the kind ever seen in the General Hospital. This affection is regarded by Radcliffe Crocker as a form of diffuse scleroderma.

Dr. FOLEY had only seen three such cases. Dr. Crocker's statistics gives its frequency of occurrence as 6 in 10,000 cases. He wished to know if Dr. Campbell had tried the massage treatment in this case.

Dr. LAFLEUR had seen one case of diffuse sclerodema which, although spread over the whole body, bore a close resemblance to this case. The infiltration was even more pronounced than here, giving the skin a peculiar brawny feel, and although the blanching of the skin was well marked, there was yet no zone of redness. It was at first thought to be an œdematous condition ; but as there was no pitting on pressure, this view had to be given up.

Dr. GORDON CAMPBELL, in reply to Dr. Foley, said he had purposely refrained from active treatment, as he wished to preserve the features of the case in all their distinctness for the members of the Society. An interest-

ing point about morphœa is that it occurs on the breasts of woman, and it is thought that the irritation of the corsets acts as a causative agency. That does not seem unlikely to be the case here, as the patch occurs right on a line with the upper margin of the corsets.

Caries of the Vertebræ.—Dr WILLIAMS exhibited a specimen of tubercular spine, removed at a recent autopsy at the Royal Victoria Hospital. The tenth dorsal vertebra was affected, the changes in which were noticed chiefly in the body. The latter was increased in size, extending slightly forwards, laterally,and backwards into the canal. As a result of this last extension, the canal was diminished in size by five or six centimetres, which gave rise to a pressure on the spinal cord. The intervertebral substance, however, seemed slightly affected, the bone having grown over it in the canal.

Dr. ADAMI called attention to the fact that in the intervertebral disc immediately above the tenth dorsal vertebra there was a small calcareous mass evidently tubercular in origin, and indicating apparently, from its relationship that the disease had commenced in the intervertebral disc and thence had extended into the bone.

Dr. JAS. STEWART had this case under his care, and the symptoms pointed clearly to a compression myelitis. For a time there were marked symptoms of irritation of the nerve roots. The extreme tenderness of the bones was an interesting feature, and one not always seen in such cases; for instance, Dr. Bell has at the present moment two cases of tuberculosis of the spine under his care in the Royal Victoria Hospital, and in neither of them is there any special tenderness. The question arose whether an operation in this case would have been followed by any beneficial results, but as the patient was so far reduced when admitted to the hospital, it was doubtful whether he could stand the shock of an operation.

Dr. GUNN had also seen this case. The patient came to the Hospital complaining of lumbago, lasting over a year.

He felt pretty well otherwise. Examination revealed some tenderness over one or two vertebræ, and it was on this account that he was admitted. Considering this case, Dr. Gunn thought that all cases of lumbago, accompanied by tenderness of any of the vertebræ, should be regarded with suspicion.

Dr. JAS. BELL took a great interest in cases of this kind. It seemed to him that in a case where the cord is pressed against the unyielding vertebral arch, the removal of that arch should relieve the symptoms, provided it was done early enough. But as this is seldom the case, it becomes a puzzling question to decide what cases to operate upon, and what ones to leave alone. The opinion held by many in the profession that in these cases of paraplegia the condition was apt to undergo spontaneous improvement, had much to do with deterring men from early, operation and in his experience this opinion had very little foundation. He could recall several cases where he regretted not having operated early, when the paraplegia first appeared, and where he would have operated were it not for this prevaling impression. In cases of this kind he thought the actions of surgeons should be prompt and fearless, for it requires only a comparatively short time for degenerative changes to take place in the distal portion of the cord. He had already operated upon two cases, in both of which the paraplegia had been complete for two or three months. Both seemed to improve for the first two or three days after the operation, but in neither was the improvement permanent. He asked how long after the paraplegia develops can one reasonably expect recovery to take place on removal of the pressure ?

Dr. JAMES STEWART, in reply to Dr. Bell's question, said that in an ordinary case of descending degeneration of the lateral columns, recovery may take place many months afterwards, if the pressure is of an ordinary kind. Of course, where there has been absolute obliteration of all the functions of the column, one would not expect restoration to take place after three or four months.

Osteo-Sarcoma of Femur.—Dr. WILLIAMS showed a specimen of a bone tumour occurring in the lower portion of a femur, removed by Dr. Kirkpatrick, which measured about 20 inches in circumference. The tumour was lobulated in outline, and quite a large hæmorrhage had occurred in front of the knee joint, and numerous hæmorrhages were noticed in various parts of the growth. The inner surface of the patella and the head of the tibia were somewhat eroded.

Dr. ADAMI said that microscopically the tumour presented the characters of a periosteal sarcoma of the large mixed cell type. A little distance from the surface the cells were to be found embedded in a hyaline stroma, and the section suggested the possibility that we were dealing with a malignant enchondroma. In the more central portions hæmorrhagic and necrotic areas existed. Areas also were seen which had almost the appearance of cylindroma. An interesting point in this tumour was the tendency which apparently existed for the tumour substance to radiate from the joint. The early history also received in this case, was the history of a joint trouble. At first the growth was periosteal, but after a time it grew inwards also ; yet the periosteal growth always predominated, as could be determined by observing the shaft where it could be noticed that the tumour extends to a higher point externally than internally.

Dr. KIRKPATRICK showed the members a photograph of the limb taken prior to the operation. The history extended back only ten months. The patient was a farmer, 22 years of age. Sharp transient pain in the knee joint was the first symptom noticed. There is no history of injury. At the end of four months he could not bend the knee beyond a right angle. Until the 6th month it was regarded as an ordinary synovitis, and treated with blisters, etc. At the seventh month two lumps noticed at the knee joint ; followed, two weeks later, by similar lumps in the popliteal space. In the middle of the eighth month these lumps had

grown into one mass around the knee joint ; and the circumference of this mass measured eighteen inches. One month later, or about the end of the ninth month, it had increased to a circumference of twenty-two inches ; at which time the operation was performed. Ten months ago the patient weighed over 200 pounds, but when he entered the hospital he only weighed 146½. Amputation at the hip joint was performed on April 22nd by Wyeth's method. The limb was transfixed by two iron skewers, which were pressed completely through the limb, and proved a most satisfactory means of fixing the esmarch. No blood was lost when the circular cut was made, except what was in the limb below the point of removal, which however, was considerable for owing to the nature of the tumour, no bandage was employed to empty the limb of blood. After loosening of the skewers and the constricting band below them, much blood was lost. To counteract the effect of the loss, two hypodermics of strychnia, and two enemata of saline solution were administered, and it was noticed that each of the latter had a marked and almost immediate good effect on the pulse. The patient is now doing well and going about the ward. The wound was dressed in the ordinary way.

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Intra-Capsular Fracture of the Femur.—Dr. WILLIAM'S showed a specimen which was obtained by Dr. Adami from a woman, 75 years of age. She lived three years after the fracture occurred and was able to walk about with the injured limb. The specimen shows that no bony union had taken place ; numerous fibrous bands pass across the fractured surfaces, uniting them with fibrous material so dense that it resembled cartilage, and was firm to the feel. In reference to a discussion which took place at a previous meeting as to how often, if ever, bony union occurs in these cases, Dr. Williams remarked that he had looked up all the specimens of this kind in the McGill Museum, and found that out of ten specimens of the unimpacted intra capsular fractures, not one showed bony union; while of two of the impacted variety, one showed union.

Hyperostosis Following Fracture.—Dr. WILLIAMS exhibited a tibia and fibula, illustrating this condition. The tibia showed signs of two or three old fractures which had occurred at different times. A large bony growth extended between, and united the tibia and fibula in their upper portion. This bridge, as it may be called, of bone is of interest, inasmuch as it frequently takes place in either the leg or forearm when both the bones are broken. Firmly attached around this bony growth, was a large mass of firm fibrous tissue with numerous sinuses from which pus was oozing.

Dr. JAMES BELL remembered the subject of the last specimen shown. He was a man about 40 years of age, and a hard drinker, who had a compound fracture of the leg, from which he recovered with difficulty, but was ultimately discharged from the hospital with his wounds all healed and his bones united. He soon had another spree in which he again fractured his leg (again a compound fracture) in the same place.

Exostosis Bursata or Exostosis Cartilaginia.—Dr. BELL showed a specimen. This form of exostosis differs from the ordinary by growing in the neighbourhood of joints, from the epiphysial line, and the growths are usually directed away from the joint at an angle of 45° from the shaft of the bone. They are covered at the free extremity with cartilage, and enclosed synovial membrane which often contains a large number of free bodies. The first case of this kind which came under Dr. Bell's care was in 1888, at which time only two cases were on record, the report of his case being then the third. In Prof. Billroth's case 25 free cartilaginous bodies were found within the synovial sac, while his first case contained 55 similar bodies. Bergmann reports a case in which 500 were found. The exostosis in the present case was situated in the region of the shoulder joint, and grew from the bicipital groove at an angle of 45° from the shaft. As to the pathology of these growths—they are generally explained by Cohnheim's

theory of embryonic cells, lying dormant until something occurs, or the conditions are favourable, for them to take on active growth.

Cultures of Gonococci.—Dr. ADAMI reported a case of gonorrheal synovitis, the clinical history of which is rather interesting as showing the importance of bacteriology as aid to diagnosis. The credit of reporting this case was due to Dr. H. S. Shaw, resident surgeon at the Royal Victoria Hospital, who, Dr. Adami stated, had done all the work connected with it. The patient was a man with a swollen knee and a slight thin discharge from the urethra. The question arose as to whether or not it was a specific synovitis. The knee having been rendered carefully antiseptic, a Pravaz syringe was used to withdraw some drops of clear fluid which were immediately spread upon the surface of two tubes of glycerine agar, which ten days afterwards showed the gonococci culture. Subsequently gonococci were discovered in the urethral discharge. Dr. Adami remarked that it is of importance to know that the gonococci may be cultivated on glycerine agar, a material which is easily obtained, where hitherto it was thought to require blood serum for its growth. He pointed out that the growth was very slight and that it might be not so much a growth upon the glycerine agar as upon the fine film of synovial fluid which covered it.

Pseudo-Membranous Enteritis.—Dr. GUNN read a paper upon this subject which will appear in a future number of the JOURNAL.

Dr. LAFLEUR remarked that he had seen one of the cases reported by Osler, while at the Johns Hopkins Hospital. The ailment did not impress him as being very distressing A slight looseness of the bowels, with the occasional passage of very perfect intestinal casts, which microscopical examination showed to be composed of a hyaline laminated material, with here and there desquamated cells from the mucosa, but with very few leucocytes or red blood cells.

As far as he could remember the treatment was local—washing out the bowels, etc.

Dr. ALLAN had a case of this kind which came under his care at the Montreal Dispensary. She passed large quantities of these casts daily.

Dr. MORROW wished to know if this condition was analagous to the somewhat similar condition which occurs in the respiratory tract.

Dr. GORDON CAMPBELL had seen a case of this nature in which the chief trouble was the involuntary passage of the casts. They were most commonly passed during sleep, and for a time it was not settled whether they were of rectal or vaginal origin.

Dr. GUNN, in reply to Dr. Morrow, said it was his impression that the pseudo membranous condition which occurred in the bronchi was inflammatory and allied to the diphtheritic form. There was consequently no similarity between them.

Stated Meeting, June 1st, 1894.

J. B. MCCONNELL, M.D., 2ND VICE-PRESIDENT, IN THE CHAIR.

Dr. S. R. Mackenzie was elected an ordinary member.

Chronic Nephritis in the Dog.—Dr. ADAMI exhibited specimens, and gave the results of his examination, of a case of chronic interstitial nephritis in a dog, submitted to him by Dr. Wesley Mills. The two kidneys differed in size, the right being the larger, and to the naked eye presented the condition well known as chronic interstitial nephritis. The capsules in both were thickened; they peeled off without great difficulty, revealing a nodular surface beneath. They cut firmly: the sections showing dilated pelves, and the cortex varied in thickness, in some places corresponding to the depression of the surface, and was almost entirely atrophied; that of the right kidney, on the whole, appeared less affected than that of the left. Microscopical examination revealed a condition similar to

that seen in chronic interstitial nephritis of man. There was a general fibrosis of the medulla, with occasional tubules containing traces of uratic deposit, while the pelvis of the left kidney contained a minute calculus. The ureters in both had rather thickened walls, but neither in these nor in the bladder was there found any evidence pointing towards an obstruction to the flow of urine.

Commenting on the existence of this disease in the dog, Dr. Adami remarked that while in his experience, as well as in that of Dr. Mills, it was of rather rare occurrence, yet it was easy to conceive causes for its production; inasmuch as the factors of excessive inception of nitrogenous food, coupled with insufficient exercise, which are recognized causes of the condition in man, are both apt to prevail in the life of the dog. There is a tendency towards fibroid valvular change frequently observed in dogs, but arterial sclerosis he had never observed. In over-fed dogs an eczematous condition of the skin is not uncommon, and taking these indications of the gouty diathesis into consideration, he was inclined to believe that, if cirrhosis of the kidney in dogs was not often recognized, it was because careful autopsies have not been performed in sufficient number.

Dr. WESLEY MILLS had received these kidneys from Dr. Darling, a graduate of the Faculty of Comparative Medicine, who thought the condition very rare, and published an account of the case in the *Journal of Comparative Medicine*, which report Dr. Mills read in detail. Commenting on the case, Dr. Mills remarked that although diseases of the kidneys are considered of rare occurrence amongst the lower animals, systematic autopsies are not by any means frequent, especially in the case of the dog. He was impressed with the truth of Dr. Adami's view of the case, as seen by the history; this animal was fed on flesh three times daily, and had a hypertrophied left ventricle. Moreover, it is well known that dogs are very susceptible to rheumatism, and rheumatism is allied to gout. The skin

of the dog is easily disordered, and almost every ailment he is subject to, expresses itself by some abnormal condition of that portion of his anatomy.

In reply to a question of Dr. REED as to whether albuminuria ever occurred amongst dogs, Dr. MILLS remarked that the matter had never been much looked into owing to the great difficulty of catheterising dogs. He had worked upon the urine of dogs, and he could say, as to healthy animals, that there was a certain amount of uric and oxalic acids as well as a great deal of sulphates in the normal urine.

Angioma and Adenoma in a Woodchuck.—Dr. ADAMI showed the liver of a woodchuck, which had also been sent him for examination by Dr. Wesley Mills. At the right extremity of the organ a tense bulging could be seen which extended deeply into its substance, as well as behind, below, above, and in front of it. Upon cutting into this mass, it was seen to be sharply circumscribed, somewhat paler than the normal liver tissue, with here and there spots of a deeper tint, marking hæmorrhages or dilated vessels Microscopical examination of the tumour revealed different conditions in the periphery and the central portions. The peripheral specimens showed adenoma of the liver cells, not biliary adenoma which is more common in man, but an overgrowth of the liver cells proper which, however, were not regularly arranged in lobes with the bile ducts separating and encircling them, as in normal liver, but more scattered. The central portion of the tumour showed, in addition to the hæmorrhages already noticed, dilated vessels and cavernous-like spaces, characteristic of angioma. The combination of the two conditions then, adenoma and angioma, make it extremely interesting as well as rare. Comparing this with analgous conditions found in the human liver, Dr. Adami remarked that in man the liver is perhaps the most frequent seat of angiomata; but a combined condition as we have here is very unusual in the lower animals, the tendency is to have adenoma

develop rather than carcinoma ; and that the former is the condition here seems confirmed by the well defined outlines of the tumour and the absence of any sign of infiltration into the surrounding tissue.

Dr. WESLEY MILLS remarked that the woodchuck in question was one of the animals he had been rearing and studying, with a view to arrive at some sounder knowledge on the question of hibernation. This was the one which did not hibernate. He obtained it when quite young, and kept it for three years, and without having ever shown any symptoms of being unwell it was found dead one morning in the cage. At the post-mortem he noticed a dark mass standing out in the folds of the mesentery connected with the liver ; there seemed to have been considerable hæmorrhage which he thought was the cause of the sudden death. At the same time it may be noted that it died in the spring, a season when these animals' vitality is at its lowest, and but little is required to end their career.

Dr. LAFLEUR wished to know why Dr. Adami considered adenomata of the liver very rare in man. Although he himself only remembered having seen one case of such, yet quite a number of these tumours had been reported, and the condition seemed to be common in France.

Dr. ADAMI in reply said that the cases of ademonata reported, as well as he could recollect, were only biliary adenomata ; not adenoma of the liver cells as in this case.

Ovarian Cyst.—Dr. ADAMI exhibited a large ovarian cyst received from Dr. Alloway. It consisted of an enormous sac, within which were secondary sacs, or daughter cysts, and was a typical example of an ovarian cystoma, the interest in the specimen being in the one huge sac.

Dr. ALLOWAY stated that the patient was an old woman, 61 years of age, and was remarkable for the activity which she showed considering her age and the enormous distension of her abdomen. She complained of no pain, but suffered from a complete procidentia of the pelvic contents. It was this latter condition which first led Dr. Alloway to

doubt the primary diagnosis, that the tumor was connected with the liver, and on further investigation he found he could separate the border of the liver from the upper portion of the tumour; the dull note over the tumour was continued into the pelvic cavity. The doubt as to diagnosis was the most interesting feature in the case.

Ovarian Cyst.—DR. ADAMI showed a second specimen of an ovarian cyst received from Dr. Alloway. This also showed secondary cysts, but not so highly developed as in the former case. There seemed to have been a certain amount of inflammation about the main sac.

Dr. ALLOWAY.—The patient was an unmarried woman, 40 years of age, who had been suffering from, and been under treatment for the past six months, for recurring attacks of pelvic inflammation. Recently the abdomen began to enlarge very much, and seeking advice, a diagnosis of ovarian tumour was made. The whole cyst wall was united to the parietal peritoneum, and in some places to the intestines. These adhesions were very dense and had to be separated inch by inch, thereby increasing greatly the difficulty of the operation. The intestines were of the colour of port wine, and the coils were united together by a soft gelatinous material, which was easily broken down without injuring the bowel. This latter condition Dr. Alloway had never before seen in abdominal sections, and thought it might have been the result of the very recent peritonitis.

Tubal Pregnancy.—Dr. ALLOWAY gave the following history: The patient, a lady 28 years of age, had four or five miscarriages, never having a full term child. She had her last miscarriage about six weeks ago, which was followed by a metrorrhagia of three weeks standing. He found the parts so exquisitely tender as to preclude exact diagnosis, at the same time he came to the conclusion that there was some mass growing upon the left side of the uterus, and that the interior needed curretting. The curretting he first performed, and while the patient

was under ether he made a thorough examination with a view to ascertain the nature of the growth to the left of the uterus. This seemed to be in the broad ligament, and as the idea of tubal fœtation presenting itself he advised an immediate operation for its removal. One week later the patient was again put under ether and the abdomen opened. A large mass was noticed coming up on the left side, which shoved the uterus to the right. It was of a dark bluish color, hard in parts, while in other parts it had the feel of a cyst filled with fluid. The segmoid flexure of the large intestine had become adherent to the tumour which it completely encircled, and entered the pelvis by the right instead of the left side. The ovary was not distinguishable but was part of the tumour mass. The mass was removed and the patient has done very well, and is now almost convalescent. The condition here could not be distinguished from a hæmatoma of the ovary, which condition it really was, but, in his opinion, it was likely to be caused by a ruptured tubal pregnancy.

Dr. ARMSTRONG said he had now seen quite a number of extra-uterine fœtations, and his experience was that the clinical history in these cases has been anything but uniform and clear. In none of his cases has he seen that clear clinical history which the text books laid down. There is often no definite history of a skipped menstrual period, no severe pain, no condition of collapse indicating a serious internal hæmorrhage. This indefinite element in the history should always be borne in mind, as many of those cases if neglected will likely go on to a second rupture which must prove fatal. Whenever there is a localized mass on one side of recent occurrence, Dr. Armstrong thought the matter should be closely investigated with a view to exclude extra-uterine fœtation.

Dr. J. C. CAMERON wished to know upon what data Dr. Alloway had based his diagnosis of extra-uterine fœtation?

Dr. ALLOWAY in answer said that the patient had gone three weeks over a menstrual period; when the flow did

commence there was no history of any clots or solid masses being passed, nothing but a constant trickling flow of blood; there was also a history of a sudden acute attack of pelvic inflammation accompanied by a certain degree of collapse—not the collapse due to a large hæmorrhage, but the collapse accompanying shock. This acute inflammatory attack was passed over very lightly at the time, being regarded as some transient alteration in the bowel. But when taken in connection with the missed menstruation, and the mass to the left of the uterus, Dr. Alloway thought there was abundant evidence of extra-uterine pregnancy. The operation moreover confirmed his diagnosis, inasmuch as a hæmatoma of the ovary is a very rare condition, and the failure to find a fœtus proves nothing, since in those cases where we have very early fœtation, no evidence of the embryo proper is found.

Dr. J C. CAMERON believed it to be rare for pregnancy to have existed, for the ovum to have attached itself to, and grown in the tube or uterus without leaving some evidence of the fact behind. Unless one could produce some such evidence, he did not think they were justified in pronouncing and reporting it as a case of extra-uterine pregnancy. The symptoms of inflammation and shock upon which Dr. Alloway lays such stress, are just as fully symptoms of ovarian hæmatoma as of extra-uterine pregnancy.

Dr. ADAMI while admitting that Dr. Cameron's remarks were in some respects well founded, he yet wished to suggest the possibility that after all it might not be so easy to detect fœtation by the microscope. He referred to the recent case reported by Dr. Armstrong in which placental and fœtal tissue were sought for in vain, and in which a diagnosis of extra-uterine pregnancy was arrived at by the finding of a curious little malformed body like a fœtus. Here suppose, which is not unlikely, this fœtus had been lost, or passed out, or absorbed, no evidence would have remained of the abdominal fœtation.

Epithelioma of the Cervix Uteri.—Dr. ALLOWAY next produced a photograph of a case now under his care in the General Hospital. The woman was operated upon about 10 days ago for a malignant growth of the uterus, accompanied by a constant discharge, which had lasted for the past six or eight months. The mass was as large as a child's head at the seventh or eighth month, it filled the whole of the vagina, and protruded without as seen by the photograph. It was quite friable, easily broken down with the fingers, and was of the ordinary cauliflower variety of malignant diseases. It extended up as far as the posterior fornix of the vagina, without greatly implicating the latter's walls; and examination through the vagina showed the broad ligament to be effected. On account of this latter complication the uterus was not removed, but instead a considerable portion of the tumour was cut away, to the great relief of the patient, and before her discharge from the hospital he hoped to remove still more of it. The interest in the case lies in the size and protrusion of the malignant growth.

Dr. ADAMI referring to this case said that from the distinct cauliflower appearance of the mass one would have suspected epithelioma; sections, however, showed it characteristic of carcinoma instead of epithelioma. It is richly cellular, and most probably originated from some of the mucous crypts rather than the epithelium of the cervix.

Blue Colouration of the Urine following the use of Methylene Blue.—Dr. ADAMI exhibited several specimens of urine of a deep bluish green tint, from a patient under the care of Dr. Roddick. She was a Jewess, aged 63, and came complaining of a sore, with swelling, upon the leg. She stated that she was diabetic, and upon bringing a sample of her urine, Dr. Roddick thought that the bottle was not clean, but he was informed by the patient that a physician in New York had been treating her for some "internal trouble," giving her small pills, after which the urine was invariably blue for some time.

The urine was submitted to Dr. G. C. L. Wolf for analysis who reports as follows :—Fluid of a bright bluish green colour ; odour of phenol ; acid reaction ; specific gravity 1032 ; urea, 1.15% ; glucose, 5.87% (28.16 grains per ounce). On making an examination to ascertain the nature of the colouring matter, Dr. Wolf found that by treating with strong HCl., the colour was to a great extent discharged ; on treating with chloroform the colour was taken up by the solvent ; silk was unaffected, but cotton, wool, and especially cork wood, were well stained. On examination with the spectroscope, the urine showed a broad band in the red at 70° on Zeiss' scale, when 60° was placed in the first oxyhæmoglobin line. Solutions of various blue dyes with urine were made up and with methylene blue a band was obtained in precisely the same position. The urine showed no bands before and after E., which would lead to a suspicion of Indican colouring matters. The conclusion, therefore, was that the colour of the urine was due to methylene blue, and the assumption followed that this was the drug prescribed by her physician in New York. Dr. Adami stated that Dr. Wolf had called attention to the fact, that as pointed out in a recent number of the *Journal of the Society of Chemical Industry*, if glucose be heated with methylene blue, the colour disappears. He found that upon keeping this blue urine in a sealed tube, it became slowly decolorized. This may be taken as an additional proof, if such were needed after the admirable proof already given by him, that the colouring matter in the diabetic urine was methylene blue.

Stated Meeting, June 15th, 1894.

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

Carcinoma of the Rectum.—Dr. WILLIAMS reported the case for Dr. Kirkpatrick. Mrs. M., aged 39, admitted to the General Hospital on May 29th. For one year she had suffered from irregularity of the bowels and pain during defecation. For the past two months she had suffered

from persistent diarrhœa, otherwise her general health had been good. Examination revealed a stricture of the rectum, about 2 inches above the anus, impassable to the tip of the little finger, felt smooth and hard, and did not bleed. By vaginal examination the mass could be easily detected. On June 11th, the patient was etherised, and the stricture was incised along the posterior part with a blunt pointed bistoury, and dilated. The bowel was then irrigated with a warm boracic solution, and a large rubber tube wrapped about with iodoform gauze inserted. The patient sank and died nine hours after the operation.

Owing to the smooth fibrous surface of the lower end of the mass, Dr. Kirkpatrick was at first disposed to regard it as a syphilitic stricture. However, after a more thorough examination under ether, especially noting the totally different character of the upper portion of the mass, he was satisfied of its malignant nature.

Dr. ADAMI had found at the autopsy an irregular rent 4 cm. long, in the anterior wall of the rectum through which fluid had passed into Douglas' pouch. The abdominal cavity contained 24 ounces of fluid of a light brown colour. The lower portion of the rectum was thickened and constricted for 5-8 cm of its length, with the mucous surface rough and nodular. The growth extended back towards the sacrum, but did not involve the uterus or bladder. Microscopic examination showed the growth to consist of small round cells and spindle cells, with large amount of connective tissue, infiltrating the mucous and submucous coats lying between bands of muscle fibres and extending to the peritoneum. In places there was considerable destruction of the mucous membrane. The diagnosis was that of schirrus cancer, which is thought to have originated in the submucosa, and spread to neighbouring tissues.

Dr. JAS. BELL—Wished to know if the microscopic appearances in this case were definitely characteristic of carcinoma. Even in case they were, he would be still inclined to doubt its cancerous nature in the face of the

clinical history and physical appearances of the condition. A young woman, only 39 years of age, in good health, with the exception of a diarrhœa which does not appear to have caused much wasting, is not a likely subject for cancer. The only physical sign present was the very marked stricture of the rectum, and when this was laid open no tumour was found surrounding it. The speaker directed the members' attention to the bowel now before them, and pointed out that there was no mass in it, neither had it anything which gave one the characteristic feeling of cancerous infiltration. In the presence of such evidence, contra-indicating cancer, he thought we were not justified in making a diagnosis on the microscopical evidence alone. Such conditions are often the result of syphilis, and are amongst the manifestations of that disease which do not yield to treatment. He had seen four cases of this kind within the past year; two of which he operated upon by excising portions of the bowel. In the first case he excised about four inches, in the second a little less, and in both he was rather surprised and disgusted upon finding after excision how little real infiltration or tumour there was. Before the operation, upon examining the bowel, one got this feeling of stricture and hard infiltration, but after its removal the condition noticed was just like what is seen in this case—no real thickening, no mass or neoplasm. Both of his specimens had been submitted to Dr. Adami, who had not been able to arrive at any satisfactory conclusion, beyond the fact that the specimens were not cancerous and showed evidences of some chronic inflammatory change. A third case died in the hospital with extensive ulcerations throughout the intestines. The fourth case he saw quite recently, and had the characteristic appearances of syphilis about the buttocks and anus. In all these four cases, Dr. Bell expressed himself as convinced that he was dealing with syphilis, although at the time in none of them had he made that diagnosis. The two cases which he operated on last fall, have since done well, which

would not be the case had he been dealing with cancer. His first patient has had a return of the same condition as well as some similar growths about the margin of the anus which have been treated with caustic, etc., but he has not lost flesh, although suffering from diarrhœa with mucous stools, sometimes slight hæmorrhages, and tenesmus. The second case has had no return, and is doing very well.

Angiomata of the Colon.—Dr. WILLIAMS next presented a portion of the descending colon with microscopical sections of some angiomatous growths affecting the same, which were obtained by Dr. Adami at a recent autopsy.

Dr. ADAMI found upon opening the abdomen that the great omentum was collected in a mass beneath the left hypochondrium and was of a grayish turbid appearance. The intestines were somewhat reddened, and showed scattered over the serous surface, especially upon that of the transverse colon, numerous minute ecchymoses. The descending colon was of a deep bluish black colour and had a peculiarly dense feel.

On section there was evidence of inflammation throughout ; most marked in the descending colon, commencing at the splenic flexure. At this point a band of adhesions having formed, produced a second flexure, and below this the organ was contracted, with thickened walls, and of a dark congested appearance. In its walls were observed about a dozen brownish bodies, averaging 1.5 cm. in diameter, and projecting from the mucosa, producing a considerable constriction in the gut. On microscopical examination of one of these nodules the mucous membrane was found raised up ; the angiomatous growth is in the submucosa and is of the hypertrophic and capillary variety ; the muscular coat was drawn in into the centre of the nodule, at the apex of which, hæmorrhages frequently occurred. The surrounding tissue was thickened and contain a quantity of fat.

A Case of Infection by the Bacillus Pyocyaneus.—Dr. WILLIAMS reported the following case .

A child five months old, an inmate of the Montreal Foundling and Infant Nursery, who had previously been well, and nursed by a healthy mother, began without any apparent reason to fail.

For two months he steadily lost weight, became restless and seemed to suffer from abdominal pain. When Dr. Williams saw him he appeared listless and moaned when the abdomen was touched. There was a small group of purple papules on either side of the umbilicus. The abdomen was relaxed and the skin dry. Diarrhœa with greenish stools had been present for some time and there was a slight fever (99°-100°).

These papules increased in number, became of a deeper blue colour, and spread to the chest, shoulders and thighs; the abdominal pain ceased, but the child became worse. The limbs were rather stiff, flexed, the child seldom moved, and cried when the limbs were extended, while they at once became flexed again. Dr. Kenneth Cameron then took charge of the Nursery and noticed that during three days preceding the child's death hæmorrhages occurred from the nose, from between the toes and from abraded papules on the thigh and back. The day before death a slight discharge was noticed from the right ear.

At the autopsy the organs were seen to be pale. Minute petechiae were present in the mucosa of the stomach and intestines, but no hæmorrhages had occurred into these organs. There were two hæmorrhagic infarcts in each kidney and one on the heart.

Cultures prepared on gelatin from the spleen, kidney, liver and blood, and kept at the temperature of the room, gave in seven days the characteristic growth of the bacillus pyocyaneus.

Careful cultivation showed this to be a pure growth, and after various media had been satisfactorily tried, a rabbit was inoculated with 0.5 c.c. of a broth culture.

The animal had diarrhœa and stiffness of the extremities; became comatose and died in forty hours.

On examination, punctate hæmorrhages were found in the mucosa of the stomach and intestines, and the bacillus was found in the various organs and in the intestinal contents and urine.

Microscopic sections of the liver, spleen and kidneys, showed the bacillus in large numbers in the small blood vessels and about the capillaries causing numerous minute thrombi and commencing parenchymatous degeneration.

The case appeared to be of interest, as he had been able to find but three other cases reported of primary infection by the bacillus pyocyaneus alone. These were by Neumann and Ehlers. They all occurred in children and were similar in nearly every respect, except in the character of the eruption, which from the papular form became bullous and pustular, the contents developing in time a blue colour.

There had been a number of cases where the bacillus had been found associated with other micro-organisms, especially in suppurating wounds, erysipelas, etc., and in one instance after enteric fever. But one writer in English, H. C. Ernst, had mentioned finding the bacillus. He records a case where it occurred in the pericardial fluid, associated with the tubercle bacillus, although from its large size and slight modifications in colour production he had considered it another variety of the B. pyocyaneus.

Dr. Williams expressed his sincere thanks to Dr. Adami for his kind assistance in the bacteriological work and in investigating the literature of the subject.

Dr. ADAMI thought this was a singularly interesting case, as it is the first of the kind reported in America. Several cases have occurred in France ; two in Germany, and two in Copenhagen, where the bacillus has been found pathogenic. The attention of pathologists was first directed to this organism by the occurrence from time to time of a blue color in the dressing from suppurating wounds, and which was formerly supposed to be due to the presence and reaction of iodine on starch in the bandages. The investigations, however, of Gessard and others, proved this blue

colour to be due to the growth of a little bacillus, which was so short as to be sometimes mistaken for a micrococus. The blue colour, moreover, was found not to be due to the bacillus itself, but to a secretion produced by the bacillus; and this blue pigment was further shown to be a combination of several pigments, blue, green, and red, all of which have been isolated and given separate names, such as pyocyanine, pyozanthin, etc. Speaking of its pathognomonic qualities, Dr. Adami said that in man it is most commonly found on the surface of wounds, and ordinarily is not virulent enough to cause death. As Dr. Williams mentioned, it is seldom a primary affection, and has heretofore been chiefly regarded as a disagreeable complication, rather than as a disease in itself. Some workers in this field, however, having obtained pure cultures of the bacillus, inoculated rabbits with them, and studied the effects. After large doses the animal suffers from severe diarrhœa and hæmaturia, grows gradually comatose and dies within from 24 to 40 hours. Autopsies reveal hæmorrhages throughout the various organs of the body. When smaller doses are given, the animal emaciates, has a diarrhœa, and dies from a kind of ascending paralysis. It is only the young and very feeble of the human family that seem to be susceptible to general infection from this microbe, such as occurs in the rabbit; and it is of interest to observe that when a case does occur a parallelism between the symptoms in the two animals exists. There is the same diarrhœa, the same weakness or prostration, and the same hæmorrhages both mucous and cutaneous. It is quite possible that such cases are more common among children than is generally supposed.

Dr. KENNETH CAMERON thought that the cutaneous hæmorrhages which occurred between the toes were of interest, as there had been absolutely no injury to account for their appearance; they seemed to be simple extravasations of blood. He regretted very much that neither the blood nor the urine had been examined during life. A case with an almost exactly similar eruption occurred in the nursery

about a year ago, which proved fatal, but the autopsy showed no hæmorrhages of the internal organs. No bacteriological examination had been made.

Dr. REED asked if there was any theory as to how the bacillus had obtained an entry into the body.

Dr. WILLIAMS, in reply to Dr Reed's question, thought that aside from the infection through a wound, the alimentary tract might be the most likely point of entrance, and mentioned a case reported by Oettinger where a young man, 18 years of age, convalescent from typhoid, suddenly developed a fever, with some other symptoms unlike those of the previous illness, and on examining the stools this bacillus was discovered. He recovered.

Mycetoma Pedis—Madura Foot Disease.—Dr. WILLIAMS read for Dr. Kirkpatrick the following report and exhibited the specimen.

Xavier Lecompte, æt 21, a French-Canadian, was born in Montreal, and has always lived here with the exception of five years which he passed in Ontario between the age of twelve and seventeen.

His parents, three brothers and four sisters are living and in fair health. No history of tuberculosis can be obtained.

At the age of eleven, a bluish spot appeared on the inner side of the foot which gradually increased until it became the size of a five cent piece. One day while walking he struck the foot, breaking open the spot, from which a little blood escaped. After this the spot disappeared.

A few months later, what he described as a button of flesh (un bouton de chair), appeared on the sole of the foot between the first and second metatarsals, which was later on removed, leaving a little hole which ultimately healed. Three years later a similer growth appeared on the dorsum of the foot directly opposite to where the other nodule had been on the sole. Two years after he struck the foot with an axe, bruising it severely, and ever since the foot has remained swollen and tender, though he was quite able to

walk until last fall, when the condition became very much aggravated, the nodules appearing all over the foot.

The discharge from these sinuses has always been scanty and of a thin purulent character. He came to the General Hospital where, as the foot seemed useless, it was amputated.

Dr. ADAMI remarked that in the pressure of work he had delayed the examination of the foot until that afternoon when first he heard that it was to be brought before the Society that evening.

On proceeding to examine it he was immediately struck by the resemblance between the general appearance of the amputated foot and that of cases of madura foot. There were the same button like elevations of the skin scattered over the surface, and at their centres the same fine sinuses leading deep down into the interior of the foot, while by pressure upon the buttons there was extanded a thin pus containing characteristic yellowish gray bodies. Upon studying the discharge under the microscope, and again upon examination of sections the structure of these bodies could be clearly made out. They clearly resembled in general appearance the ray fungi of actinomycosis, forming lobate masses of varying size, the larger being easily distinguished by the naked eye, some indeed being as big as small shot. Like actinomyces, the masses showed a radiate arrangement of filaments or clubs all around the periphery, with a central irregular network of filaments; unlike actinomyces the clubs were so large that they could be recognized by the low power of the microscope (Zeiss A), and under the high power there was a marked tendency observed for the clubs to bifurcate. In the sections the masses could be seen surrounded by collections of leucocytes, so loose that unless special precautions were taken, the fungi fell out. These appearances tally entirely with the very full description given by Kanthack in the *Journal of Pathology*, Vol. I. Whether this is a species absolutely identical with the Indian form can only be determined by

comparison of material. The clinical history, and the hurried examination so far made, point on the whole to this being a case of true madura foot, and to the species associated with the disease being one and the same.

Dr. Adami pointed out that as in the previous case so here he had brought before the Society what, to the best of his belief, was the first case of the kind reported in any English speaking country.

The disease of ' madura foot' occurs with fair frequency in certain parts of Hindustan, but outside of India is very rare. A case had, he thought, been reported in Italy, another more recently in Algiers, where Vincent had been able to gain a pure culture of the fungus, another in Germany. The characteristics of the disease, which has been recognised for the last thirty years, are its chronic nature, its limitation to the lower extremities and the development of numerous sinuses. More recently attention has been called by VanDyke Carter and others to the constant presence of peculiar bodies in the discharge. These are either black or yellow, and as already indicated Kanthack has conclusively shown them to be closely allied in structure to the actinomycosis fungus. The disease would seem to be most common in countries where the inhabitants go about barefoot ; it was noticeable that though in Canada it is not the habit to do so, the disease in this case was contracted during childhood, that is to say, during the period of frequent barefootedness.

Dr. GORDON CAMPBELL pointed out that in Crocker's work on the Diseases of the Skin there was a reference to a previous case of madura foot reported from America. He did not think that any details were given.

THE

Montreal Medical Journal.

VOL. XXIII. JULY, 1894. No. 1.

VACCINATION AND THE VACCINE SUPPLY.

The recent report in an evening paper of two cases where death was said to have occurred after vaccination and to have been attributed to the employment of "bad vaccine," as well as the rumours of other serious results having followed vaccination in this city, brings the subject again before the public and the profession. It may be said at once that the question so fiercely discussed in the past as to whether vaccine protects against smallpox or not, is no longer debatable, and that the substitution of animal virus for the old methods of arm to arm vaccination, and vaccination from the scab, has practically settled the question of the inoculation of syphilis and other constitutional diseases which affect the human race. Tuberculosis, the only disease which, with the most ordinary precautions, might be inoculated from the cow, is now so well understood and so easily recognized by veterinary surgeons, that there is no reasonable risk from that quarter. Beside, and wholly apart from these dangers, which, greatly exaggerated, have been the stock-in trade arguments of anti-vaccinationists agitators in the past, are the infinitely more serious risks arising from the possible contamination of the virus or the vaccination wound with pathogenic bacteria. Indeed, in the case reported, in which the child died of a typical pyæmia, the death, if due to vaccination at all, can only be explained by supposing some such contamination. No thinking physician needs to be told that in addition to healthy animals, in clean stables, and with

hygienic snrroundings, it is absolutely essential that the operations of inoculating the animals and collecting and preserving the virus, should be carried out with the same elaborate precautions as to cleanliness and sterilization of the hands of the operator, the instruments and the parts to be operated upon, that the surgeon finds necessary in major operations or the bacteriologist in the making of cultures. This implies that the medical director of the vaccine institution and his assistants should be skilled bacteriologists and thoroughly familiar with modern surgical methods. Although this is, perhaps, the most important link in the chain, the same principles must be carried out in the distribution of the charged points, and the operation of vaccination itself. There is the gravest reason to fear that neither in the production of the lymph and the charging of the ivory points at the vaccine institutes, the distribution of the same through the health offices, nor in the hands of the majority of the physicians who vaccinate are these precautions observed as they should be. Happily, the rusty, unclean lancet has pretty generally disappeared from the physician's waistcoat pocket, and the ivory point alone is used to make the vaccination wound. Hence the necessity that it should be chemically clean and free from pathogenic bacteria, more especially pus cocci. Again, how many physicians take the trouble to cleanse the hands or wash the part before scarification, or give any instructions as to how the wound should be treated subsequently! We would respectfully suggest that the Provincial Board of Health, which enjoys the confidence of the profession in this province to a degree which is not equalled by any other of our provincial institutions, should take the necessary steps to see that the vaccine supplied from the Quebec vaccine "farm," as it is called, is produced with all necessary precautions and safeguards, and that it is distributed in such a way as to render contamination impossible, and finally that explicit instructions should be issued to every householder, and to every physician, explaining in detail the necessary steps in the operation and the reasons therefor. The verdict of the jury of physicians at the inquest upon the body of the child above referred to, stated

that the vaccine produced at the Quebec vaccine "farm" was *perfect*. In spite of this strong statement, it is the obvious duty of the Provincial Board of Health, under whose control the farm is conducted, to make a thorough investigation of the methods employed in that institution, and to leave no stone unturned to make it as nearly perfect as possible.

THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The above association will hold its 22nd meeting in Montreal, Sept. 25th to 28th next. The Association was organized in 1872 for the purpose of inaugurating measures for the restriction and prevention of contagious and infectious diseases, and for the diffusion of sanitary knowledge among the people. The growth of the Association and the work it has accomplished more than justify its existence. Its membership has been augmented from year to year until it now constitutes the largest and strongest sanitary body in the world, and embraces in territorial extent the United States, the Dominion of Canada, and the Republic of Mexico. Under the impetus given by its work, state and local boards of health and sanitary associations have been organized, sanitary publications increased, and hygienic knowledge widely and extensively diffused.

Among its members may be found physicians, lawyers, ministers, civil and sanitary engineers, health officers, teachers, plumbers, merchants, etc., in fact every profession and many of the industries are represented in its list of members. The only qualifications required for membership are a good moral character, an interest in hygiene and the endorsement of two members of the Association. Cost of membership, five dollars a year.

The local Committee of Arrangements is at work to insure a large and profitable meeting, and it is to be hoped that the number of Canadians who will join the Association, for this Canadian meeting will compare favourably with what has been done elsewhere.

The railways have reduced their rates to one-fare and one-third, provided certificates of attendance be produced when

leaving Montreal on the return trip. Special blanks, for this purpose, will be furnished on demand. The membership fee is $5.00, which hardly covers the cost of the copy of the proceedings of the convention to which every member is entitled.

An excursion to Grosse Isle Quarantine Station has been arranged by the local committee, leaving on the afternoon of the 28th to return early on the 30th. This will be most attractive, both from a sanitary and scenic point of view, the most interesting part of the Province of Quebec will be seen. For application blanks or further information, address Dr. E. Pelletier, Secretary local Committee of Arrangements, 76 St. Gabriel street, Montreal.

We trust that our readers will do all in their power to make the meeting a success. The membership of the Association has happily prevented it from becoming in any way exclusive or sectional, and all who take an interest in it are welcomed as members. That this has not in any way lessened the prestige of the Society from a scientific point of view, may be inferred from the fact that among the list of past presidents are found the names of Sternberg, Billings, and others who are recognized as leaders in sanitary science, while the name of every American sanitarian of any prominence will be found enrolled among its members.

Canada has been twice honored in the selection of the presidents, Dr. Frederick Montizambert having been elected to that office in 1889, and Dr. E. P. Lachapelle in 1893.

The scientific work of the Association has throughout been of a high order, the majority of the papers read being contributed by practical men, thoroughly familiar with the subjects with which they deal, while some communications, such as the report of the committee on disinfectants, are recognized as standard authorities.

Among the subjects selected for discussion we notice the Pollution of Water Supplies ; The Disposal of Garbage ; Animal Diseases and Animal Food ; The Nomenclature of Diseases ; National Health Legislation ; Causes and Prevention of Infant Mortality ; Prevention of Tuberculosis ; Railway Sanitation ;

The Education of the Young in the Principles of Hygiene ; Inspection of School Children with reference to Eye-sight, and Disinfection of Dwellings after Infectious Diseases.

It has been the rule that a meeting of the Association in any city has resulted in a general awakening to the necessity of the sanitary reforms needed there, and we may hope that the benefits derived from the Montreal meeting of the American Public Health Association will include amongst other things a lowering of the death rate and an improved state of public health.

CANADIAN MEDICAL ASSOCIATION.

Elaborate preparations are being made in St. John, N.B., for the reception of the Canadian Medical Association on August 22nd and 23rd next. The gathering will probably be one of the largest the Association has ever held. From reports that come in from time to time, it is believed that the profession of the Maritime provinces will turn out to a man. From Montreal, Toronto and points further west there will be large delegations.

The following are some of the papers promised :

Cases in Practice—B. J. McKechnie, Nanaimo, B.C.

A Year's Experience in Appendicitis—Jas. Bell, Montreal.

A Case of Tuberculosis of arm of 14 years standing cured by Inoculation with Erysipelas—W. S. Muir, Truro, N.S.

The Treatment of Diseases of the Ovaries and Fallopian Tubes—A. Lapthorn Smith, Montreal.

Intestinal Antisepsis in Typhoid Fever—D. A. Campbell, Halifax, N.S.

The use and abuse of the various cautery agents in the treatment of Nasal Affections—E. A. Kirkpatrick, Halifax, N.S.

The present status of Asthenopia—F. Buller, Montreal.

Eye-strain Headaches—J. H. Morrison, St. John, N.B.

Note on Epilepsy—W. H. Haffie, Halifax, N.S.

Influence of Mind on Disease—J. A. McLeay, Walford, Ont,

Miner's Heart—R. A. H. MacKeen, Cow Bay, Cape Breton, N.S.

Address in Surgery—J. F. Black, Halifax, N.S. ; E. A. Praeger, Nanaimo, B.C.

Some Functional Derangements of the Liver—J. E. Graham, Toronto.

Treatment of certain forms of Uterine Hæmorrhage, F. T. Bilby, Port Hope.

Address in Medicine—Wm. Bayard, St. John, N.B.

Ophthalmic and Aural Cases—Stephen Dodge, Halifax, N.S.

Papers will be read in the order in which they are received by the Secretary. It is important that those intending to contribute papers will communicate with the Secretary at an early date.

Obituary.

PROF. GEO. E. FENWICK, M.D.

It is with the profoundest feelings of sorrow and regret that we have to record the death of Prof. Geo. E. Fenwick, which took place on the 26th of June last. He was born in Quebec in 1825, and graduated M.D., C.M., McGill University, 1847. For many years Dr. Fenwick has been a prominent figure in the medical world of Canada, and his reputation as a bold, skilful and scientific surgeon was not confined to Canada alone. The many generations of students who have sat under him, both in college and hospital, and who have always looked upon him as a friend, will receive the news of his death with more than ordinary regret. As a teacher in hospital he markedly impressed his personality on his class and taught them to rely on their own experience and powers of observation, and not on text-books alone. Dr. Fenwick was never the slave of authority, he had a mind of his own and observed independently; what seemed good for him to do he did, not because some one in Germany or England advocated it, but because he himself had practised it and found it of benefit. He never could be trammelled by rules and regulations, and even time was no object to him if he had work to do. It is hard to estimate the value of Dr. Fenwick's services to Canadian surgery. He was the pioneer in many operations and procedures in those pre-antiseptic days, when the difficulties of surgery were so much greater and the obstacles so much more formidable than now-a-days, when every young graduate has the *pruritus operandi*, and thinks that so long as he carries out aseptic precautions nothing can go wrong; when in doubt he always operates, thus often reducing the science of surgery to a mere mechanical trade. Now Dr. Fenwick undertook

and carried through new and formidable procedures when there was everything to lose, and when operations, new ones especially, were looked upon with suspicion and the operator occasionally held up to obloquy. If he thought the patient would be benefited by operation, nothing would deter him from carrying out his plan. His name in this country, at any rate, will always be associated with excision of the knee-joint, and his operation, which he has described in the *International Encyclopedia of Surgery*, and also in a book on "Excision of the Knee-joint," will always be extensively practised. As a lithotomist Dr. Fenwick had great success, his large collection of calculi, with their histories, in the Museum of the Medical Faculty of McGill University testifies to this. He was renowned for his success in operations on large tumors, especially of the neck, and also for his successful excisions of the rectum. He was an accomplished surgical anatomist, and this was a great aid to him in operations which required careful dissections. The extent of his work can, in some measure, be estimated by turning over the pages of the CANADA MEDICAL JOURNAL and CANADA MEDICAL AND SURGICAL JOURNAL, of both of which journals he was editor, the first in association with Dr. F. W. Campbell. In these journals are numerous valuable contributions from his pen, both in the original and editorial departments. No one who had ever been intimately associated with Dr. Fenwick could help loving him; his kindly face, his sympathetic manner, his willingness to place his knowledge and skill at the service of his younger brethren, his charity for error and his modesty and genuineness, endeared him to all his associates both young and old. The museum of the Medical Faculty of McGill University owes much to Dr. Fenwick, the majority of the specimens in the "bone room" were collected by him. He took infinite trouble to secure "specimens," running risks which others would be unwilling to encounter to obtain them. Everyone who has seen him in the operating room will remember how keen he was to preserve a stone just

removed or bones excised, and how he was ever unhappy whilst they were passing about the class, so fearful was he that they might come to harm.

He held many important positions, having been President of the Canadian Medical Association and Montreal Medico-Chirurgical Society, and also for many years a member of the Council of the College of Physicians and Surgeons of Quebec. For twenty-five years he was connected with the teaching staff of McGill University, two years as Demonstrator of Anatomy, eight years as Professor of Clinical Surgery, and fifteen years as Professor of Surgery. He was probably the oldest volunteer surgeon in Canada, and was connected up to his death with the Montreal Field Battery. Through ill-health Dr. Fenwick resigned his professorship in 1890, and although he did some operating work after that, still he found his strength was not sufficient for the strain of a difficult operation, and for the past two years he did little more than a consulting practice. He developed arterial sclerosis some years ago, and had had several slight cerebral hæmorrhages.

A few days before his death he had a cerebral hæmorrhage with right hemiplagia and aphasia and gradually sank on the afternoon of the 26th of June.

He was one of the last of the surgeons who had obtained his great skill in operating in the school of surgeons of the pre-anæsthetic days. He has left an honorable record at the McGill University and the Montreal General Hospital which will not soon be effaced, and his memory will always be green in the hearts of his students and colleagues.

In 1852 he married Miss E. C. De Hertel who survives him, and he leaves one daughter, Mrs. Geo. Massey.

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXIII. AUGUST, 1894. No. 2.

Original Communications.

A BIOLOGICAL ANALYSIS OF THE MONTREAL WATER SUPPLY DURING THE PERIOD FROM NOVEMBER, 1890, TO NOVEMBER, 1891.*

By WYATT JOHNSTON, M.D.

Lecturer in Bacteriology in McGill University; Bacteriologist to the Quebec Provincial Board of Health.

The following account of a biological analysis, made three years ago, has been abridged from my report addressed at the time to Mr. B. D. McConnell, then Superintendent of the Montreal Water Works, who took a deep interest in the investigation. Chemical analyses were made at thesame time by Prof. R. F. Ruttan and Prof. Phister.

PLAN OF INVESTIGATION.

I. Regular monthy examinations of samples of water from the following four localities :

1. The lower reservoir.
2. The settling basin.
3. A point near the intake of the St. Cunegonde Water Supply.
4. A point in the middle of the River St. Lawrence south of Nun's Island.

These examinations were made at the express order of the Water Committee with a view of determining whether the water

* Published by permission of the Water Committee of the Montreal City Council.

obtained from localities 3 and 4 would be preferable to that furnished by the present intake on the north shore of the St. Lawrence, just above the Lachine Rapids.

In addition, I found it necessary to make :

II. Examination of tap water obtained from various points within the city, from the upper reservior, and from the aqueduct,

Fig. 1.

to see whether evidences of local contamination existed and to trace the effect of temperature, rainfall and water level.

III. Examination of the water of the St. Lawrence and Ottawa rivers at points above Montreal, to see whether the influence of the sewage from the towns along their banks was perceptible.

IV. Examination of surface waters from other parts of Canada, and especially from uninhabited districts.

METHODS.

A large proportion of the work consisted in the estimation of the number of bacteria present. (Quantative bacterial analysis.) The nature of the bacteria was also studied, as far as the time limits of the analysis permitted. Cultures, for quantitative work, were for the most part made in slightly alkaline, 10 p.c. beef peptone gelatine, made after Lœffler's formula, and grown at 20°C. The samples were taken 10 to 20 feet below the surface, by means of an apparatus which I show in figure 1, and were plated in flat glass vials. The cultures were, as a rule, made within a few minutes of the time of taking the samples, and in a few instances, when about an hour or two intervened, the samples were kept in an ice box.

The sediments were all examined microscopically, and during four months the microscopical organisms present were estimated quantitatively by the Sedgwick-Rafter method.

SOURCE OF SUPPLY.

Before giving the details of the analysis, it might be well, in order to make the report intelligible to those who are not familiar with the local conditions of the Montreal water supply, to briefly mention the character of the water, and the topography of the district from whence it is obtained.

Although taken from the north shore of the St. Lawrence river, the Montreal water supply is derived, during the greater part of the year, from the Ottawa, which enters the St. Lawrence from the north at a point about 20 miles above the intake, and forms a belt of dark water close to the shore, the border between this water and the clear green of the St. Lawrence proper being very distinct, though varying in position with changes in the direction and force of the wind and the relative level of the water in the two rivers. During the winter owing apparently to an ice-jam, the Ottawa passes to the north of the island of Montreal, so that the Montreal supply during the months of January, February and March consists of nearly pure St. Lawrence water.

Ottawa River.

The Ottawa river drains an area of over 60,000 square miles

(rather less than the Danube), most of which is entirely uninhabited. Its discharge has been estimated at 60,000 cubic feet per second. Its average width for the 100 miles above Montreal is somewhat over half a mile. At 25 miles above the city it expands into the lake of Two Mountains, varying from 2 to 4 miles in width, and 4 miles above the intake, into Lake St. Louis, 4 to 7 miles wide. There are rapids and falls 60 and 30 miles above Montreal. At many points between Ottawa and Montreal navigation is impeded by enormous sawdust beds from the Ottawa saw mills.

The population along its course, according to the census of 1891, is about 300,000, or 6 per square mile, of which about 100,000 is comprised in cities or towns of over 1,000 inhabitants, the remainder being rural. The chief centres of population and their distances above the Montreal intake are as follows:

Pembroke	4,401	220 Miles.
Renfrew	2,611	190
Perth	3,136	180
Smith's Falls	3,864	175
Aylmer	1,945	140
Ottawa (and Hull)	55,429	125
Buckingham	2,239	100
Hawkesbury	2,042	60
Lachute	1,751	50
St. Anne	1,500	20
Lachine	3,167	4

The Ottawa water is dark, and contains a large amount of peaty pigment, giving the water, when in a deep column, a tint suggesting that of porter. Apart from this it is stated by Prof. Ruttan to contain almost no organic matter. It is much softer than the St. Lawrence water.

St. Lawrence River.—The St. Lawrence drains an area of 510,000 square miles or about half the Mssissippi. Its discharge, before receiving the Ottawa, has been estimated at 500,000 cubic feet per second. Apart from the cities and towns, situated upon the Great Lakes or on streams draining into them, the total population of the towns and villages of over 1,000, situated upon the river proper, amounts to about 55,000, of which Kingston (20,000) is really in Lake Ontario. The

populations and distances above the intake at Montreal are as follows :

Kingston	20,000	185 Miles.
Gananoque	3,669	150
*Clayton	4,400	430
*Prescott	2,920	120
*Ogdensburg	11,662	120
Cornwall	6,085	70
*Valleyfield	3,315	35
*Beauharnois	1,590	20

Towns marked * are on the south side of the river.

The river averages fully one to two miles in breadth during the whole of its course, and expands into Lake St. Louis, 4 to 7 miles wide, just above the intake, and into Lake St. Francis, 8 miles wide, 35 miles above. There are rapids at points 20, 25, 30, 35, and 80 miles above the intake.

The St. Lawrence water is clear and light green in colour, and is fairly hard.*

In both these rivers the temperature falls to the freezing point in winter, even at points near the bed of the stream.

I. Monthly Examination of Water Supply.

Microscopical Analysis.—The method employed was, at first, that of simply allowing the sediment to settle in a conical glass, and by means of a pipette placing a little of it under a microscope. This gives a general idea of the constituents of the sediment, but affords no information as to the quantity in which the different organisms are present. In the Sedgwick-Rafter method (which unfortunately only became known to me after the analysis was completed) a given

* The following table compiled from Dr. Ruttan's analyses shows the average chemical composition of Ottawa and St. Lawrence water (quantities in part per million) :

	Color. Lovibond scale.			Solids.			Nitrogenous Matter.			Oxygen consumed on 80°F.		Hardness (as Calcium Carbonate.)	Chloride (as Chlorine.)
	Red.	Yellow.	Blue.	Total.	Loss on ignition.	Ash.	Free Ammonia.	Albumenoid Ammonia.	Nitrates.	15 min.	4 hrs.		
Ottawa.	1.7	5.4	0 04	52	24	28	0.02	0.12	0.03	3.7	6.4	55	1.5
St. Lawrence.	0.1	1.0	0.47	142	69	74	0 04	0.09	0.09	0 5	1.2	102	3.5

quantity of the water, usually 500 cc., is filtered through sand and the sand with the organisms retained in it shaken up with a definite quantity of distilled water, 1 cc. of this is then placed in a glass cell, leaving a superficial area of 1,000 square millimetres and a depth of 1 millimetre. By examining under a microscope, into the eye piece of which a diaphragm has been fitted covering exactly 1 square mm. with the objective employed, each microscopic field represents a fixed unit of measurement with reference to the original water, and the number of each different organism per cc. can be calculated from the average number present in each field. As a rule the genera only are determined. This method is not applicable for determining the number or character of the bacteria.

During the period from March to November, 1891, the presence of the following organisms was noted. The numbers represent the number of different genera found in one sample and not of individual organisms per c.c. :

Month 1891.	Mar.	Aprl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
Sample from :									
Reservoir.....	*	6	12	16	*	8	8	5	9
Settling Basin.	5	3	15	9	*	10	5	*	8
St. Cunegonde.	4	4	31	18	13	11	5	5	12
St. Lawrence..	*	3	3	12	18	14	5	5	9

* Not estimated.

Of these, the following genera were the most frequent :

DIATOMACEÆ. — *Acnanthes, Amphora, Asterionella, Cyclotella, Diatoma, Encyonema, Epithemia, Fragilaria, Gomphonema, Melosira, Navicula, Nitzschia, Pleurosigma, Stauroneis, Surirella, Stephanodiscus, Synedra, Tabellaria.*

CYANOPHYCEÆ.—*Anabæna, Aphanizomenon, Oscillaria.*

OTHER ALGÆ.—*Chara, Cladophora, Cœlosphærium, Conferva, Cosmarium, Palmella, Pleurococcus, Pediastrum, Vaucheria, Volvox, Penium, Protococcus, Scenedesmus, Tetraspora, Zygogonium.*

FUNGI.—*Crenothrix.*

RHIZOPODA.—*Actinocyclus, Actinophrys, Amœba, Gromia,*

INFUSORIA.—*Bursaria, Carchesium, Dinobryon, Epistylis, Euglena, Heteronema, Monas, Paramœcium, Trachelocerca, Trachelomonas. Vorticella.*

SPONGIARIA—*Sponge spicules.*

VERMES.—*Anguileula, Monostylus, Rotifer, Stylonychia. Stentor.*

CRUSTACEA.—*Alona, Cyclops, Daphnia.*

As I had not been able to employ the quantitative method during the year of analysis, I give the results obtained, per c.c., from tap water during the period from April 10th to June 4th, 1892, in the following table :

Date of examination.....	April 30.	May 6.	May 15.	May 28.	June 4.
Number of sample.....	62	63	64	65	66
DIATOMACEÆ.	**64**	**84**	**56**	**42**	**322**
Acnanthes.....	2	0	0	0	0
Amphora	3	pr	0	0	0
Asterionella	21	36	18	12	20
Cocconeis.....	0	0	0	1	0
Cyclotella	pr	pr.	2	0	1
Cymbella	1	pr.	0	0	0
Diatoma	2	0	pr.	0	0
Encyonema....	0	0	2	0	0
Fragilaria.....	pr	6	pr.	2	0
Gomphonema.....	1	pr.	pr.	0	0
Grammatophora	0	0	0	pr.	0
Melosira	23	24	21	2	5
Navicula	9	9	pr.	1	300
Nitzschia	0	4	11	2	0
Surirella	0	0	1	0	0
Synedra	2	4	0	22	1
Tabellaria	0	3	0	0	0
ALGAE.					
Chlorococcus.....	0	32	0	0	0
Protococcus	0	2	1	0	0
Zoospores	pr	pr.	pr.	pr.	10
INFUSORIA.					
Monas	0	2	pr.	0	0
MISCELLANEOUS.					
Starch grains.....	3	2.5	2	2	4.5

I have omitted from the table the following genera which, though occasionally seen, were never present in an amount equal to 0.5 per c.c. : —*Coscinodiscus, Pleurosigma, Stanroneis, Stephanodiscus, Oscillaria, Arthrodesmus, Cladophora, Cœlosphærium, Conferva, Pediastrum, Pleurococcus, Beggiota, Amœba, Cercomonas, Trachelomonas, Spongilla and Cyclops.*

The organisms were more numerous in the warm than in the colder months. The higher animal forms being only met with during the summer.

Pollen grains (most commonly from the pine) and vegetable

fibres were usually present in traces, and were most constant in the samples from the reservoir.

From the above results it will be seen that while the waters contain small amounts of the non-bacterial organisms common to all surface water, these were never found in sufficient quantity to affect the odor, taste, or hygienic quality of the water. Of the organisms, the diatoms Melosira and Asterionella were the only ones occurring constantly in any appreciable quantity.

The green organism (Anabœma or Aphanizomenon) which abounds in the water of Lake Ontario and the Bay of Quinte during the summer, was scarcely detected at Montreal, though owing to the infrequency of the periods of collecting samples it may have been missed. Though present in the reservoir during August and September very little appeared to enter the supply pipes.

The results of examination of sediments, on the whole, were decidedly satisfactory from a hygienic point of view.

Starch Grains.—The only anomalous features presented by the sediments was the constant occurrence of starch grains in the sediment of most of the samples. These I first noticed in the May samples, they being present in the water from the reservoir, settling basin and St. Cunegonde, but not in that from the St. Lawrence.

These grains were usually round or slightly oval, or in some cases presented blunted angles. They measured 12 to 30 microns in diameter, stained blue with iodine solution and polarized with a central cross. Some showed a central fissure in the form of a slit or cross, and often lamination could be distinctly made out.

I was at first disposed to regard them as an accidental contamination, due to the entrance of dust into the samples, but this was shown not to be case by the fact that upon filtering water directly from the tap through glass wool, compressed into a small strainer, the starch was invariably detected, while the materials employed as well as the glass-ware used, showed no signs of it.

Upon consulting the standard works on water analysis, I was unable to find any reference to the presence of starch in water otherwise than as a consequence of contamination by sewage proper, kitchen refuse, or the waste of industrial establishments. On the other hand, all the other results of my analysis were strongly opposed to the theory of contamination of the water.

Being myself unable to identify the grains satisfactorily with any of the known starches, I consulted Prof. D. P. Penhallow, of McGill University, who examined them carefully and called my attention to the fact that they corresponded in size and shape and structure to corn starch grains, and were much larger than any of the starch grains found in aquatic plants.

He stated that, in his opinion, the only starch bearing aquatic plants at all likely to lead to dissemination of starch grains in the water were the yellow and white water lillies (*Nymphæa* and *Nuphar*) the starch grains of which, however, never exceeded 13 microns in diameter, and were readily distinguished, by their form and arrangement, from the granules under consideration.

If the grains were corn starch then they must have come from some starch factory or grist mill.

There were, however, no starch factories or large milling industries along the banks of the Ottawa, and though some starch factories are situated upon the St. Lawrence, none of the grains had been found by me in that water.

Upon estimating the number of starch grains per cc., I obtained the following results, for different seasons of the year, from samples of the water which happened to have been preserved;

Month.	Mar.	Aprl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
Sample.									
Reservoir.....	*	pr.	*	2	*	*	*	3	2
Settling Basin.	0	*	*	pr.	*	1	*	*	2
St. Cunegonde.	0	*	0.8	4	4	*	*	5	2
St. Lawrence..	*	*	*	0	0	*	*	0	0

* Not examined.

The largest amount of starch ever found in any sample was 7 granules per c.c., in a stagnant rusty sample, obtained from a street hydrant.

The presence of the starch in the Ottawa water and its absence from the St. Lawrence, was a matter which completely puzzled me. Examination of the starch granules of the sweet

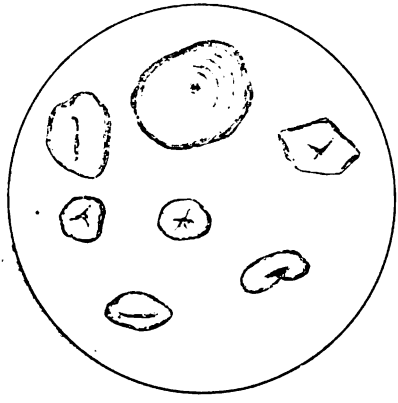

Fig. 2—Starch grains from water.

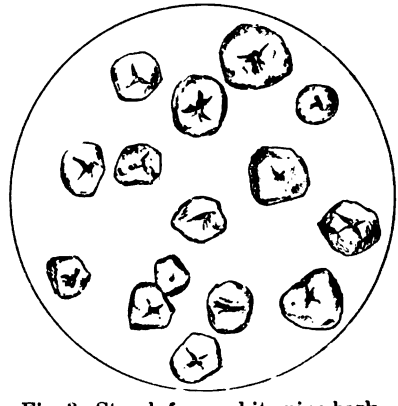

Fig. 3—Starch from white pine bark.

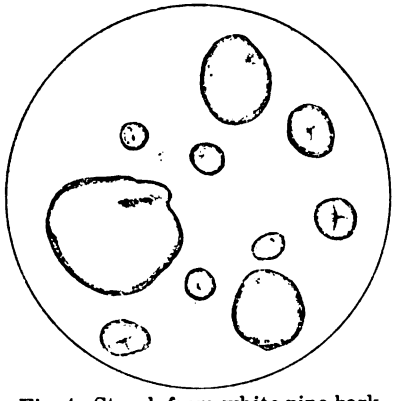

Fig. 4—Starch from white pine bark after soaking in water.

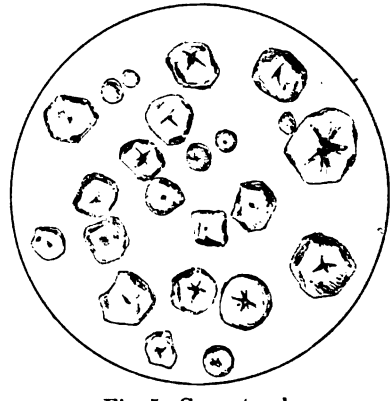

Fig. 5—Corn starch.

flag root and wild rice, showed that these grains were altogether too small to be thought of as a possible source.

At this point, Prof. G. P. Girdwood, of McGill University, suggested to me the possibility that as starch is present in the

bark of some of the coniferous trees, it might be derived from the white pine lumber which, as already stated, is sawn in such large quantities as to block the Ottawa river in places with vast beds of sawdust. Upon my examining white pine bark, I was delighted to find not only that it contained large quantities of starch, but that these, though somewhat more angular, closely corresponded in size, shape and structure with the grains found in the water (and closely resembled corn starch).

Upon soaking pine bark for two months in water, many of the starch grains in it assumed the rounded outline typical of the starch of the water sediments, whereas corn starch grains, after the same period of maceration, became fissured and tended readily to disintegrate upon slight pressure.

The appearance of the various grains may be better understood from the accompanying illustrations, figs. 2, 3, 4 and 5.

Starch grains similar to those of the pine were found, though less plentifully in the bark of the cedar, hemlock and spruce.

The following table gives the diameter in micro-millimeters of the various starches examined :

	Diameter in microns.
Water Sediments	11.4 to 28.0
White Pine Bark	8 to 28.0
Corn	5.8 to 27.0
Sweet Flag	6.0 to 13.0
Wild Rice	5.7 to 13.0
White Water Lily	1.9 to 7.6
Yellow Water Lily	3.8 to 13.3

There is nothing to show that the starch forms a dangerous ingredient of the water. I have also found somewhat similar grains under circumstances which did not show any possibility of sawdust pollution, and unless great care is exercised one is liable to meet with them as a result of contamination of the glass-ware, etc., by dust.

My excuse for giving the above results at such length, is that it does not seem to have been recognized as yet that starch

grains may be observed in water independently of sewage or industrial pollution on the one hand, and of errors in manipulation on the other.

Bacterial Analysis.—The opinion entertained by chemists of the Montreal water supply, at the time when this examination was undertaken, is fairly well expressed in Bulletin No. 15 of the Inland Revenue Department at Ottawa, which in referring to the relatively high proportion of organic matter, speaks of it as " capable of sustaining and nourishing, to a much greater degree than in most water supplies, those minute organisms which, while in most cases harmless, are closely related to others known as disease germs. A water so largely impregnated with organic matter, as that of the Ottawa, would become a very efficient nidus for the propagation of morbific bacteria were such organism to find an entrance to it."*

It may be stated in a general way that a pure water should not habitually contain large numbers of bacteria. Although no hard and fast rule can be set, Miquel's scale fairly expresses our present ideas upon the relation of the number of bacteria to the purity of water :

Exceptionally pure	water	contains	0 to 10 per c.c.
Very pure	"	"	10 to 100
Pure	"	"	100 to 1,000
Poor	"	"	1,000 to 10,000
Impure	"	"	10,000 to 100,000
Very impure	"	"	100,000 and over.

The number of bacteria in filtered water should not, according to Koch, habitually exceed 100 per c.c.

I was agreeably surprised to find that the Montreal water, instead of teeming with bacteria, was conspicuously free from them, as compared with other bodies of running water, so that whatever might be the nature of the organic matter present it did not appear to be specially favourable to bacterial growth.

The following table shows the average number of bacteria found in some well known surface waters, most of which are

* McGill, Bulletin No. 15, Department of Inland Revenue, Ottawa.

used as sources of drinking water. These marked * are filtered before being distributed :

		Locality.	Authority.
Ottawa	220	Montreal	Johnston.
St. Lawrence	360		
Mississippi	800	St. Louis	Currier.
*Danube	2,000	Vienna	Kowalsky.
Seine	33,000	Above Paris	Miquel.
*Thames	19,750	Above London	P. Frankland.
Croton Aqueduct	4,280	New York	Health Report.
Hudson	3,065	Albany	Prudden.
Potomac	3,774	Washington	Thos. Smith.
Neva	5,772	St. Petersburg	Poehl.
Rhone	75	Geneva	Fol.
Rhine	20,300	Mulheim	Moers.
*Main	2,050	Frankfort	Rosenberg.
*Spree	65,000	Above Berlin	Frank.
Elbe	28,700	Hamburg	

Number of Bacteria found each month.—The following table shows the average number of bacteria per c.c. found each month in the reservoir, settling basin, St. Cunegonde and St. Lawrence samples :

Date.	Temperature of water °C.	Level of water at Lachine in feet.	Bacteria per c.c.				
			Reservoir.	Settling Basin.	St. Cunegonde.	St. Lawrence.	Combined Average.
1890							
December 1st...	4°.	11·1	8	313	473	265	284
1891							
January 5th. ...	0°.	12·0	31	44	30	61	41
February 2nd...	0°.	10·9	20	89	63	29	50
March 5th	0°.	12·2	185	164	316	577	310
April 13th.....	0°.	13·0	171	347	363	161	260
May 4th.....	10°.9	15·0	79	121	156	324	167
June 2nd.. . ..	13°.0	13·0	42	189	130	210	142
July 2nd.....	18°.3	11·5	30	481	197	81	275
August 3rd	21°.0	11·5	92	119	101	85	99
September 7th..	18°.3	10·1	21	81	53	53	52
October 1st	13°.1	10·1	40	55	29	43	42
November 25th..	4°.	10·5	143	1132	1883	363	930

The following summary shows the maximum, minimum and average number of bacteria per c.c. for each sample throughout the year, together with the dates upon which the maximum and

minimum numbers occurred, and the total number of samples examined from each source :

Number of samples examined.	Source.	Bacteria per c.c.		
		Max.	Min.	Average.
70	Reservoir	286 (Nov.)	9 (Feb.)	78
67	Settling Basin	1900 (Nov.)	32 (Oct.)	278
73	St. Cunegonde.....	2200 (Nov.)	12 (Oct.)	316
71	St. Lawrence	600 (Nov.)	18 (Oct.)	189
281				

The above tables show that during the greater part of the year the number of bacteria per c.c. of the water varies between 100 and 200. During the early part of the summer and in midwinter this number falls considerably below 100, and during the spring and early fall it rises for a short period to between 1,000 and 2,000. These temporary elevations coincide with a period of heavy rainfall which ushers in the winter, and with the melting of the snow in the spring, on both of which occasions the river level rises considerably.

The interval of one month between the taking of samples is so great, that the temporary rise in the number of bacteria might pass unnoticed, if this sample did not happen to be taken exactly at the time when it occurred. Suspecting that this was the case in 1891, I made private examinations of the tap water at intervals of one week, with the result that a rise to 1940 per c.c. (compared with 347 per c.c. in the official sample taken a few days before) was observed, the number falling to 117 by the time the next official collection became due. The number obtained in the official settling basin being 121.

It is evident that the 12 months covered by the analysis comprises the early winter increases in bacteria for both 1890 and 1891, which makes the average number for the year higher than would otherwise be the case.

This spring contamination of the water was also studied in

tap water during April, 1892. The following table shows the variation in the number of bacteria :

Date.	Bacteria per c.c.
April 2	112
9	830
16	2400
26	122
30	46

The two periods characterized by low numbers of bacteria (midwinter and early fall) correspond with seasons when the level is very low.

These relations are shown graphically in Fig. 6.

Although rainfall, when sufficient to produce a marked rise in the water level of the rivers, was found to be associated with an increased number of bacteria, due no doubt to the washings of the soil, no increase was noted corresponding to the ordinary local rainfall.

Comparison of the Four Samples Examined.

Reservoir.—One is struck by the marked superiority of the reservoir water shown by its small number of bacteria, as compared with the other samples. During 9 months of the 12, the number of bacteria was below 100, while the average number was less than one-third of the number found in the settling basin. This, apparently, is due to the beneficial effects of sedimentation, although the reservoir is not well constructed for that process (not having separate inlet and outlet pipes), but chiefly serves to secure a head of water with constant pressure and to form a reserve in case of need. That the reservoir water does not stagnate, and that its quality remains unimpaired in spite of a large accumulation of mud and slime at the bottom, is a matter which can be readily accounted for. We know now that the agencies which produce the series of oxidative and nitrifying changes, leading to the self purification of waters, are a special class of organisms (nitro-bacteria) which are most abundant in that very slime which is generally regarded with so much suspicion by the public. To secure the proper perform-

ance of this beneficial process, by which the albumenoid and ammoniacal bodies, which indicate pollution, are (perhaps after being first decomposed into more readily assimilable forms by the agency of the water bacteria) changed into the more stable forms of nitrates, it is necessary that there shall be a sufficient supply of dissolved oxygen in the water and a sufficient circulation to promote oxidation and check any tendency to anærobic putrefaction. For this reason shallow reservoirs of 15 to 30 feet in depth are better than deeper ones.

Sunlight has been supposed to act beneficially by keeping in check any tendency to bacterial overgrowth, but although I have not yet been able to practically test the matter, it seems probable that the opacity of the Montreal water supply in summer would render the effect of sunlight very slight.

That the improvement which reservoir waters undergo during sedimentation is not merely due to a mechanical sinking of the bacteria, is shown by the fact that the number found in the deeper strata does not show any corresponding increase. This was seen in the following observations:

		Depth.		Bacteria per c.c.		
		From surface.	Above bottom.	Max.	Min.	Average.
Lower Reservoir..	(South Basin)..	10	15	66	43	54.3
No. 564.....	Oct. 2, 1891. .	24	1	86	55	67.3
Lower Reservoir..	(North Basin)..	10	15	.....	.....	16.0
No. 564a.....	Oct. 2, 1891...	24	1	20	15	17.5
Lower Reservoir..	(South Basin)..	5	20	236	180	203.0
No. 570.....	Nov. 29, 1891.	10	15	246	214	238.0
		20	5	248	96	172.0
		24	1	182	148	165.0
Lake St. John.....	(Roberval).....	5	40	57	9	24.2
No. 555.....	Oct. 7, 1891...	40	5	27	8	17.6

From what we know of nitrification in waters, the ideal bed for a reservoir should be coarse sand or gravel rather than of bare masonary or cement, though probably the natural sediment from the water would soon furnish a nitrifying medium.

Settling Basin.—This term as applied to the pond at the wheel house is a misnomer, as the current is always so rapid as

to allow of very little settling, and, as a matter of fact, the number of bacteria found there was never noticeably less than that in the aqueduct. From a biological point of view the plan suggested by the Superintendent of having a separate channel for the water used in obtaining power for pumping, and of greatly enlarging the settling basin seems to be an absolute necessity. At present the water is pumped into the mains with very little settling at all, while only a small proportion of it ever passes through the reservoir. I might point out that the question of what should be the proper dimensions of the settling basin, is a biological, as well as an engineering one, and a series of examinations should be made to find out what amount of surface area would be sufficient to secure, by sedimentation the requisite reduction in the number of bactcria*.

St. Cunegonde.—The samples from the St. Cunegonde source in the Nuns Island Channel showed about the same number of bacteria as those from the settling basin, and were decidedly inferior in quality to both the reservoir and St. Lawrence water.

Evidently the theory of the supposed superiority of this water arose through a mistaken interpretation of the chemical analyses by the Inland Revenue Department, and simply consists in a lessened amount of organic matter due to larger dilution by the St. Lawrence water. As the organic matter, characteristic of the Ottawa water, has been shown by Dr. Ruttan to be of the nature of a harmless pigment (crenic and apocrenic acids), the most exact proportion in which it may be present is a matter of indifference from a sanitary point of view.

That the mere passage over the rapids in anyway improves the water by oxidation has never been demonstrated, and as we now know that the oxidation of water is not simply a matter of aceration, but is due to the action of the nitrifying bacteria, there is no longer this theoretical argument in favour of this point of supply.

On the other hand, a special investigation, made jointly by

* The question of the undesirabie proximity of the garbage depot to the settling basin had not arisen at the time when this analysis was made, and I have since had no opportunity of investigating the matter.

Dr. Ruttan and myself in July, 1891, brought to light facts which show that the intake of the St. Cunegonde supply is not very favourably situated.

The discharge from the tailrace, which empties into the Nuns Island channel 150 yards above the St. Cunegonde intake, brings with it the contents of the river St. Pierre. This little stream receives the drainage of all the land lying to the north of the canal between Montreal and Lachine, with the result that its water half a mile west of Cote St. Paul was found to contain over 13,000 bacteria per cc. A little further on it receives the washings of the West End Abattoir. This addition gives the water a very offensive character, and I found it to contain 172,000 bacteria per cc. In examining the tailrace water upon several occasions I never failed to detect floating portions of offal and animal debris. After receiving the tailrace water this number was reduced to 92,500 per cc. owing to the dilution.*

As the discharge of a large volume of this filthy water at a point 450 feet above the St. Cunegonde intake which is situated, 900 feet from the shore, was so obvious an objection, I made, jointly with Dr. Ruttan, an examination of samples obtained on July 7th, 1891, at 5 points in the line between the shore and the intake in order to see how far out the zone of pollution extended. The wind was off shore and its velocity 15 miles per hour. The water level was fairly high in the channel. The water close inshore opposite the intake contained 69,000 bacteria per cc.; at 100 feet out it contained 669 per cc.; at 200 feet out it contained 238 per cc.; and at 400 feet 157 per cc. The number obtained from a sample of tap water at the pumping station was 127 per cc. which one would expect in pure water.

The chemical results obtained by Dr. Ruttan showed marked pollution inshore and at 100 feet, with slight pollutions at 200 feet and none at 400 feet, thus corresponding closely with the biological result.

It is evident that on that occasion the zone of pollution

* This contamination of the tailrace has no bearing upon the Montreal supply as the water only becomes polluted after leaving the settling basin.

ceased between 200 and 400 feet from the shore or 500 and 700 feet from the intake, and it is unlikely that under ordinary conditions the contents of the tailrace enter the St. Cunegonde supply. Still, as under altered conditions of the current, water level or bed of the river it is not impossible that this may occasionally happen, especially when the shallow flats lying inshore are packed with ice.

It would seem safer to divert the drainage of the St. Pierre into the city sewers, though I never found any evidence of such pollution in the samples examined.

I was not able to detect any evidence of pollution from the tanneries either in the water or the ice of this locality, but the probability that the Verdun shore may soon become densely populated is a further objection to the site.

An interesting point in the analysis was the increase in bacteria, was almost entirely caused by a species apparently identical with the colon bacillus. Corresponding with this increase there was a falling off in the proportion of the *Bacillus fluorescens liquefaciens*, which formed from 30 to 40 per cent. of all the colonies in the pure water of the river and only 0.5 to 1.0 per cent. of those in the polluted water of the tailrace. At 100 feet out the proportion of *B. fluorescens liq.*, rose to 12 per cent. at 200 feet to 25 per cent. and at 400 feet to 33 per cent. It would seem that any unusual deficiency of the proportion of this organism to the total colonies during summer should be regarded with great suspicion.

St. Lawrence Water.—The results of the examinations show that this water is not better from a sanitary point of view than the present city supply, as far as can be judged from the number of bacteria and the nature of the sediment. Although informed that the line of the pure St. Lawrence water would always be met with at a point 800 feet south of Nun's Island, I have on two occasions seen the Ottawa water extend as far as 1500 feet south of the island. Of the St. Lawrence water it can safely be said that it is a perfectly clean and pure river water. One point in favor of the St. Lawrence is that it is far less

affected than the present city supply by temporary pollution due to heavy rainfall or melting snow.

II.—Examination of Local Conditions Affecting the Montreal Water Supply.

Tap Water.—In order to determine whether the water as supplied by taps was similar in quality to that of the mains, numerous samples were examined during July and August of 1891. The taps were in all cases allowed to run for at least 30 minutes before samples were taken and two or more samples were always examined, in order to make sure that the number obtained was typical for the day. Besides taking samples each day from one special tap which was allowed to run continuously, I made frequent examinations from taps in various parts of the city.

The tap water was found to contain practically the same number of bacteria as the water of the settling basin and, as a rule more than that of the reservoir. The number of bacteria was found as a rule remarkably constant, irrespective of the points from which the samples were obtained. Usually, but not always, the taps on the circuit supplied by the upper reservoir (the water from which is pumped up from the lower reservoir) contained fewer bacteria than those in the lower circuit. I have given the results in the following table.

Comparison of Upper and Lower Circuit

Date.	Number of Bacteria per cc.	
	Lower Circuit.	Upper Circuit.
1891.		
May 1		
" 8	306	117
" 14	210	66
" 22	146	105
June 23	50	48
" 30	30	22

As far as it goes this supports the view that the water is improved by standing in the reservoir.

During July the daily examination showed for the upper cir-

cuit a maximum number of 136 bacteria per cc. and a minimum of 28, the average being 68. During August the maximum was 160 per cc. the minimum 17 and the average 55.

A comparison was made of the water from the lower and upper circuits with the following results.

	Lower Circuit.		Upper Circuit.	
	Reservoir.	Taps.	Reservoir.	Taps.
Sept. 23	39	37	41	50
Oct. 2	53	49	29	54

Although this shows relatively slightly more bacteria in the upper than the lower circuits, the difference is not large enough to be outside the limits of experimental error.

Aqueduct.—Two examinations of samples taken at 5 points along the aqueduct gave :

	Aug. 7.	Sept. 12.
Maximum	173	102
Minimum	93	38
Settling Basin	224	113
Lachine Intake	115	80

The variation is not sufficient to show any material change in the water during its passage from Lachine.

Dead Ends.—In districts where the circulation in the mains is not complete complaints are often made of turbidity of the water. This turbidity appears to be due to rust from the mains, but as the consumers are inclined to consider this condition as unwholesome, I made on Aug. 24th, 1891, an examination of the water from 11 different districts supplied from dead ends. The average number of bacteria found per cc. was 94, and therefore such as to exclude any idea of a polluted or stagnant state of the water. The vital statistics from the streets supplied by dead ends do not show any greater frequency of typhoid than other parts of the city. Iron rust is, as we know used as a means of precipitant for freeing water of organic matter.

III.—Study of the River Water at Points Above Montreal.

Ottawa Water.—In order to study the influence of the towns along the course of the river upon the character of the water, two sets of examinations were made in 1891, one on July 3rd, and the other on Sept. 24th. Samples were collected from the bow of a steamboat by means of a fishing rod and line to which small weighted bottles were attached, and the cultures made immediately. Duplicate samples were taken at 15 points on each trip, and a sample was also obtained from lake Des Chenes, 10 miles above Ottawa. Owing to an accident, several of the cultures made during the first trip could not be made use of. The results obtained are given in the following table together with the distances below Ottawa.

	Distances below Ottawa.	Bacteria per cc.
Above Ottawa (C.P.R. Bridge).....	0 Miles.	170
Gatineau.....	5 "	686
Cumberland.....	30 "	1530
Grenville.....	65 "	48
Carillon.....	80 "	60
*Como.....	90 "	72
*St. Anne.....	100 "	11
Lynch's Id.....	120 "	49

*In lake of Two Mountains.

These are shown graphically in Fig. 6.

This showed a marked increase in the number of bacteria below the city of Ottawa, diminishing to the normal for river water by Grenville and reaching a minimum in the lake of Two Mountains, and increasing slightly in the river channel below St. Anne. None of the smaller towns appeared to have any perceptible pollutory effect on the water.

In the second test on Sept. 24th and 25th, a much more thorough examination was obtained, but the results corresponded to a remarkable extent with those of the former examination. I have given the table in full in order to show the measure in which samples taken from the same points on two succeed-

ing days resembled one another in regard to the number of bacteria:

Locality.	Up Trip.			Down Trip.			Combined Average of both trips.
	Max.	Min.	Aver.	Max.	Min.	Aver.	
Lake Des Chenes.	.....	.....	.....	6	4	5.2	.....
Mil's below Ott'a.							
2	580	378	479	365	250	307	393
5	528	500	509	732	329	532	520
10	460	272	377	.....	.....	.....	.....
15	155	123	140	.....	.....	.....	.....
20 Cumberland.	172	130	147	176	139	152	149
30 Thurso	314	134	257	172	72	122	204
50 Montebello..	47	46	46	45	24	34	40
60 L'Orignal....	40	26	33	45	24	34	33
65 Grenville....	26	19	23	.....	.....	.....	.....
80 Carillon	37	34	36	38	26	32	34
90 Como .. (Lake of Two M'ts.)	18	10	14	28	16	22	17
92 Oka .... (Lake of Two M'ts.)			17	8	5	6	12
100 St Anne (Lake of Two M'ts.)	10	6	8	16	0	8	8
105 Lynch's Id...	21	15	18	22	14	18	18
120 Lachine	18	8	12	.....	.....	.....	.....

This is shown graphically in Figs. 7 and 8.

A point to which Dr. Ruttan was the first to call attention is that the thickly settled agricultural district composed by the counties of Pembroke and Russell, having a population of about 100,000, drains into the Ottawa. An examination of water of one of the large streams for this district, the South Nation river, was made by us in May 1892, but no evidences of pollution were detected.

From this it is evident that any pollution due to the Ottawa or other sewage is effectually got rid of long before it reaches Montreal. The greatest improvement apparently takes place in the Lake of Two Mountains the bacteria being much fewer at the lower than the upper end. Attention may also be called to the fact that the number of bacteria in the water of the Lake of Two Mountain is lower than that of the present Montreal supply which on Sept. 23rd, gave 30 to 49 per cc.

That St Anne, and upper Lachine with the intervening population along the banks of the St. Lawrence do not form a

possible source of infection for the Montreal water supply is by no means clear as our water is taken from the portion which flows by the north bank of the St. Lawrence. It seems advisable that a careful sanitary inspection of this district should be made

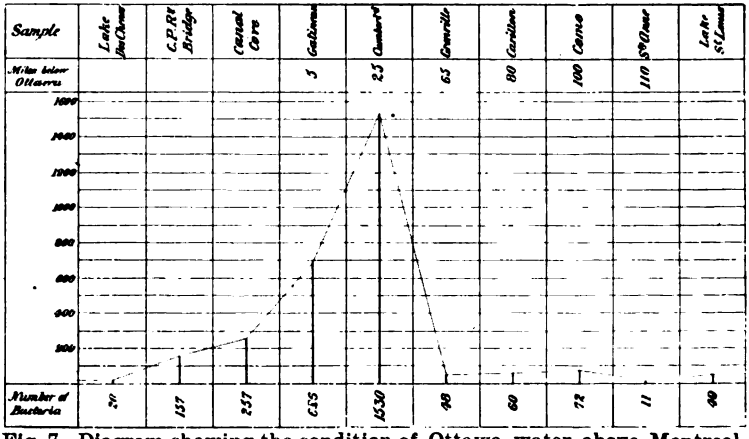

Fig. 7—Diagram showing the condition of Ottawa water above Montreal. (First examination, July 30th, 1891.)

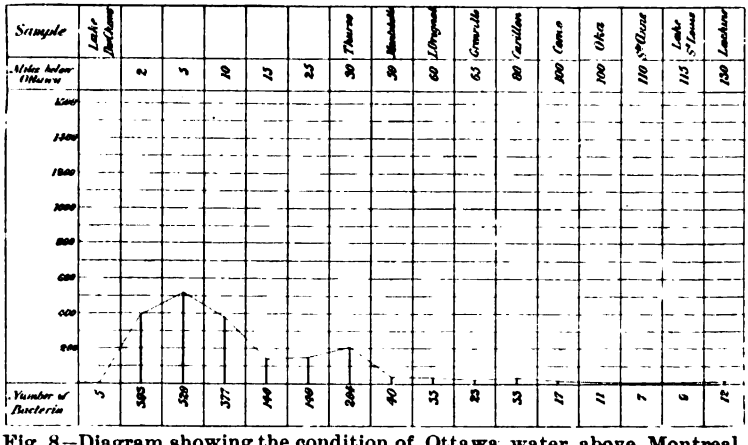

Fig. 8—Diagram showing the condition of Ottawa water above Montreal. (Second examination, Sept. 24th, 1891.)

and a map prepared showing the position of all privies, barns, etc., in order that any possible source of infection should be eliminated. The key to the safety of the Montreal drinking supply may be said to lie between St. Anne and the intake.

The entrance to the intake is confidingly placed so as to catch all washings from the adjacent portions of the lower Lachine road.

Question of typhoid infection.—The following inquiry into the possibility of water-borne typhoid in connection with the Montreal water may be of interest:

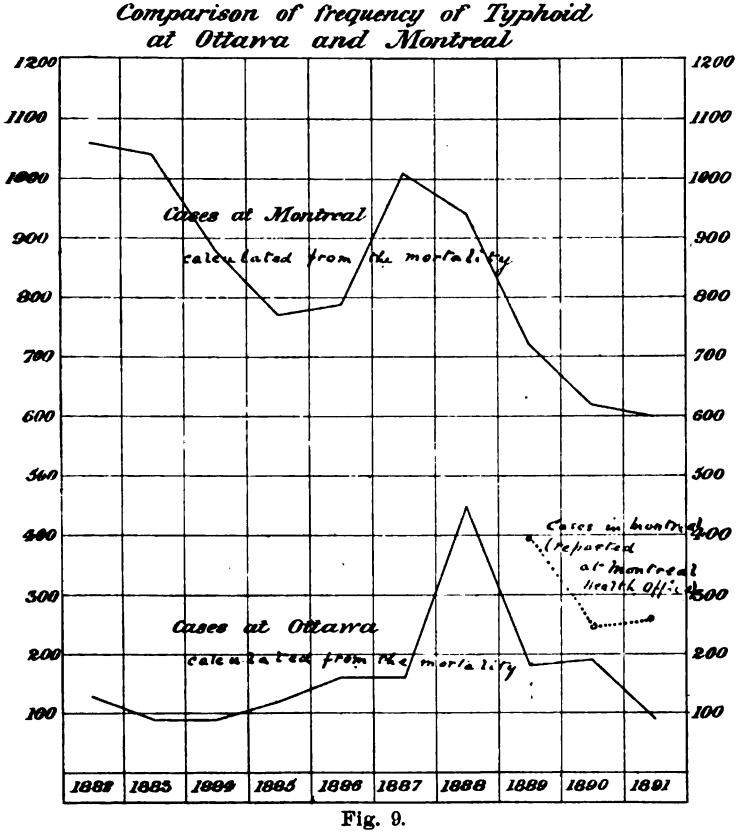

Fig. 9.

The number of cases reported each month at the health office are shown in figure 6. It is evident that if the frequency of typhoid fever depended upon general contamination of the water supply, it would, allowing for the period of incubation, be expected to appear in the month following the greatest contamination of the water. As no increase in typhoid occurred in these

months, that disease being most prevalent when the number of bacteria in the water reached its lowest point, it is evident that the turbidity and increase in bacteria which periodically affects the Montreal supply is not of such a nature as to cause or predispose to typhoid infection. In this connection it was interesting to see if there was any relation between the frequency of typhoid at Ottawa and at Montreal. Unfortunately non-fatal cases of typhoid are not reported to the Ottawa health office, and it is a well-known fact that less than half of the cases are reported at the Montreal office. As the deaths from typhoid are reported however, I have taken these as my basis, calculating the mortality at 10 per cent. As shown by figure 9 there is not only no constant relation between the frequency of typhoid in the two cities, but that even the severe epidemic of typhoid at Ottawa in 1888, was not accompanied by any increase in the number of cases in Montreal.

It appears therefore that general pollution of the Montreal water as may occur is probably of a harmless nature and does not form a source of infection.

St. Lawrence above Montreal.—A double series of observations was made in the same manner as in the case of Ottawa, the samples being taken on July 27th, 1891, between Brockville and Lachine, and on Sept. 30th, 1891, between Kingston and Lachine.

The results with the distances above the Montreal intake at which the samples were taken, are shown in the following table and in figures 10 and 11:

Sample from	Distance above intake.	Bacteria per cc.					
		July 27th			Sept. 30th		
		Max.	Min.	Average.	Max.	Min.	Average.
Lake Ontario near Kingston	190 miles.	.....	.....	.....	29	16	22
Long Point	180 "	.....	.....	.....	51	48	49
Clayton	175 "	.....	.....	.....	33	25	29
Brockville	125 "	76	14	44	.....	.....	.....
Galop Rapid	98 "	38	31	37	.....	.....	18
Head of Long Sault	75 "	210	70	121	.....	.....	76
Foot of Long Sault	68 "	156	141	151	.....	.....	.....
Cornwall	65 "	155	90	130	72	56	63
Coteau	35 "	77	26	47	15	10	12
Caughnawaga	2 "	74	49	61	33	20	27

This examination showed an interesting increase in the number of bacteria on both occasions in the swift and relatively shallow stretch of river below Prescott, the number falling again in Lake St. Francis and rising somewhat below Lake St. Louis.

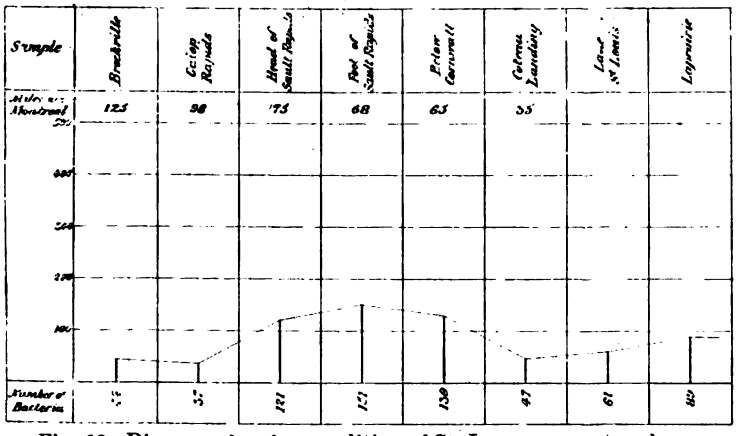

Fig. 10—Diagram showing condition of St. Lawrence water above Montreal. (First examination, July 26th, 1889.

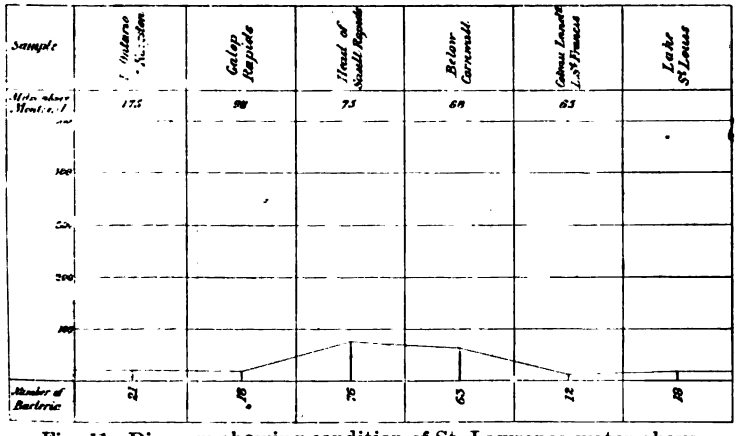

Fig. 11—Diagram showing condition of St. Lawrence water above Montreal. (Second examination, October 1st, 1891.)

It also shows throughout a relatively smaller number of bacteria in the water in September than in July.

IV. Surface Waters in other Parts of Canada.

Water from Uninhabited Districts.—A number of examinations made for the purpose of comparing the Ottawa water with

similar peaty waters for uninhabited districts, may be briefly recorded here by means of the following table, which shows that the water of the large rivers of the far north, coming from a desolate and almost unexplored country, contain as many bacteria as the Montreal water supply. It must be mentioned however that some of the samples were taken during a period of heavy rainfall late in the autumn.

Date.	Sample.	Bacteria per cc.			
		Max.	Min.	Average.	Temperature of water °C.
1891.					
Aug. 30.....	Saguenay above Chicoutimi	70	41	56	18°
Oct. 7.....	Oulatchouan	134	101	118	12°
"	Ashuap-Mouchuan	700	400	476	10°
"	Mistassini	694	400	474	10°

Other Canadian Water Supplies.—Finally it seems of some interest (in view of the scanty data available on the subject) to mention some analysis of other Canadian water supplies which I made during the summer of 1891, though the fact that these waters were not repeatedly examined makes it impossible to draw any definite conclusion as to their relative sanitary value. In each case several different samples were taken and the cultures were, in every case made upon the spot.

Locality.	Date		Bacteria per cc.		
		Number of samples.	Max.	Min.	Average.
Kingston, Ont.....	Sept. 30th, 1891.	8	99	48	65
Quebec, Q.....	Oct. 7th, " .	5	112	86	90
Sherbrooke, Q.....	July " .	7	263	85	212
Halifax, N.S.....	July 17th, 1892.	7	218	41	99

I mention these results partly in order to emphasize the fact that for a reliable analysis the water must be repeatedly examined and samples obtained at different seasons. In a recently published biological analysis of 21 Canadian water supplies,* made in the spring of 1894 very different results were obtained,

*E. B. Shuttleworth. Toronto Telegram, May 10th. 94.

the number of bacteria found in the Quebec water, for example being stated as 1045 per cc. as compared with 90 on the occasion when I examined it.

Description of Species of Bacteria Found—Qualitative Bacterial Analysis.

From a sanitary point of view the most pressing questions in connection with my analysis of the Montreal water supply were those bearing upon the possibility of pollution. This can be determined as a rule better by quantitative than qualitative work, and I found that the study of the problems of this nature took up so much time that very little was left for the determining of the species of bacteria present.

Although I isolated over fifty different forms from the water, I was not able in all cases to study them thoroughly enough to identify them with existing species described by others. This identification is a matter of extreme difficulty except in the case of well known and easily recognized forms, and the difficulty is increased rather than diminished by the fact that some workers have published as new species forms which were already described, or described them in so vague and unsatisfactory a manner that it is impossible, from the meagre details given, to tell whether they are new or not. Microphotography does not seem to have greatly helped matters, and with the pigment producing (chromogenic) bacteria, it is impossible to tell from the descriptions given what the shade of colour really is and in how much its tint depends upon the medium employed.

For these reasons, although I detected and described several forms which I consider to be new species, I have hesitated to publish them for fear of adding to the existing confusion.

It seems to me that the great tendency which these organisms have to form varieties and races makes it really of less importance except in the case of pathogenic forms to multiply the number of new species by emphasizing minute points of difference than to study their points of resemblance, and so form them into definite groups in which, while the members might differ slightly from one another, their main characteristics

would enable them to be distinguished from the members of other groups. In other words, I would suggest the study of the affinities as well as the differences of the organisms. In that case, even if one might not be quite certain if the organism was a new species, he would know approximately where to place it.

It may, perhaps, not be out of place to quote the following passage from my report made in 1891:

"The result of the large number of disjointed efforts made in the direction of systematic description of the water bacteria makes it clear that the matter can never be settled on paper or by the isolated observations of individuals. What is wanted seems to be more co-operation among those working on the subject. This would lead to a sounder basis of classification of the water flora and seems really to be the only feasible means of attaining that end. If a society or committee of those engaged in water analyses in different localities could be formed, and each member allotted one group to investigate, so that various organisms of the same group obtained from different localities could be compared by parallel cultures, the results when compared and published would soon form a recognized standard of comparison. This would not only help beginners, but would obviate to some extent the causes which tend to confuse the work."

Not feeling myself competent to take the lead in a project of this sort, I refrained from taking any steps in the matter, but it may be mentioned that with the co-operation of Professor Adami, of Montreal, an attempt is now being made to organize somewhat upon the lines just laid down a scheme for the co-operative study of the water bacteria.

Bacteria Found in Montreal Water.—The forms which occurred were almost exclusively bacilli, only two species of micrococci being met with.

During the pollution due to heavy rains and melting snow a considerable number of molds, were present. A new form of *Fusarium* was once detected in tap water.

The relative proportions of the species present often gave valuable indication of slight degrees of pollution when the total

number of colonies was not sufficient to attract attention * and certain species, notably B. mycoides, appeared when the water was exposed to the washings of cultivated land.

As a rule 5 to 7 forms were detected in each sample when the water was pure, while in impure samples from the Montreal harbour, I have isolated as many as 16 species from the sample. On the other hand when a large number of bacteria developed in stored waters which were pure nearly 90 per cent of the colonies would belong to one species, usually *B. Fluorescens liquefaciens*, and if during the summer the proportion of this organism (which was normally from 30 to 40 per cent of the total colonies) fell to below 12 per cent, other proofs of pollution were usually forthcoming.

A singular circumstance was that in winter this ratio fell to 5 or 10 per cent., although the water was pure, the proportion suddenly rising again when the warm weather returned, while *B. Aquatilis* and other members of the yellow pigment-forming group formed the leading flora during winter. This transition is shown in the following table of analyses :

No.	Sample.	Date.	Temp. of water.	Bacteria per c.c.	B. Fluresc. liq. %	B. Aquatilis, %
128	Tap	May 6, 1891.	6°	646	4	30
129	Tap	May 7	6°	860	8	35
146	Tap	May 14	10°	106	15	20
143	Reservoir	May 14	13°	106	15	20
140	Basin	May 13	11·5	146	12	20
138	St. Cunegonde	May 13	10°	189	15	15
131	St. Lawrence	May 13	9°	245	10	25
155	Tap	June 4	11·5	140	40	2
156	St. Lawrence	June 5	14°	123	30	4

The following were among the common forms met with in Montreal water :

B. arborescens, *B. aquatilis*, *B. flourescens*, *B. fluorescens liquefaciens*, *B. janthenus*, *B. glaucus*, *B. megatherium*,

* See page 99.

B. multipediculus, *B. mycoides*, *B. nacreosus*, *B. aurantiacus*, *B. ramosus*, *B. aquatilis sulcatus*, *B. mesentricus vulgatus*, *B. mesentericus fuscus*, *B. proteus*, *B. fulvus*, *B. fuscus*, *B. ochreceus*, *B. plicatus*, *B. implexus*, *B. ruber*.

Among the rare forms may be mentioned B. Berolinensis, of which one single colony was met with.

Spirilla were not detected, but it must be mentioned that the plan of cultivating in weak peptone solutions was not known at the time.

I was able by means of the Parietti and Péré methods to isolate forms apparently belonging to colon group, but never succeeded with Montreal water in finding a perfectly typical distinctive culture of *B. Coli* or *B. Typhi*, whereas I found them abundantly in some spring water at a village where typhoid was epidemic.

I regret that I was unable to test the pathogenic properties of the forms met with.

CONCLUSIONS

From the result of this analysis it appears :

1. That the Montreal water is of good quality, as compared with other surface water, and does not appear to be at present a source of danger to public health, though its future purity is not altogether assured.

2. That from a biological point of view the St. Lawrence water is not superior to that of the Ottawa.

3. That the St. Cunegonde site offers no advantages.

4. That the reservoir water is superior to that of the settling basin, and that the Ottawa water is well adapted for storage in open reservoirs.

5. That better facilities for settling water should be provided, and no water pumped into the mains without previous sedimentation.

6. That inasmuch as the extreme severity of the winter makes the employment of filtration impossible, it is necessary to watch very carefully any minor sources of possible pollution, especially those lying between the settling basin and St. Anne.

7. It would be advisable to make experimental studies upon

the dimensions and capacity of a suitable settling basin, and also to make arrangements by which the water could be examined regularly at weekly or fortnightly intervals in order that any variations from the usual standard of purity established by these analyses may be promptly investigated. It would also be well to see if a better quality of water could not be obtained from the Lake of Two Mountains, and to investigate the amount and quality of water available in the lakes in the Laurentian Mountains, lying to the north, in case of a change of supply becoming necessary in the future.

I have to record my thanks to Mr. A. Davis, Superintendent of the Montreal Water Works, for having obtained permission to publish the foregoing report, and also for kindly loaning the cuts which illustrate it.

ON FIVE CASES OF PYOSALPINGITIS.*

Abstract of Paper by A. LAPTHORN SMITH, B.A., M.D., Montreal.

Case I. was a Mrs. M., 37 years of age, mother of four children, last child thirteen years of age. She had also a miscarriage eleven years ago. She began to menstruate at the age of seventeen and was married soon after. Her periods had always been profuse. It was learned from her family physician that her husband had given her gonorrhœa about the time of her miscarriage, since which she had never been a day well. She presented the dirty, bronzed complexion, characteristic of poisoning either by pus or fæces. It was ascertained that she had always been troubled with constipation, her bowels not being moved more than once in eight days unless she took medicine. She stated that she passed water fifty times a day. Since eleven years she has suffered constantly from pain in the sides and down the thighs, besides having had several attacks of pelvic peritonitis, the last one occurring six months ago, from which she nearly died. On examination she was found to have a lacerated perineum, lacerated cervix, and a pair of large pus tubes adherent to the ovaries and both bound down in Douglas' cul de sac. Three operations at one sitting were strongly urged, but she would only consent to the cervix operation, promising to submit to abdominal section later if she did not improve after the repair of the cervix. Schroeder's operation was accordingly performed, the greatest possible care being taken not to disturb the diseased appendages. All went well until the twelfth day, when she was allowed to get up, but an hour afterwards she was taken with an acute attack of pelvic peritonitis. It was evident that the pus tubes were either leaking or that they had burst, and immediate laparatomy was decided upon, but before the family's consent could be

* Read before the Montreal Medico-Chirurgical Society, May 4th, 1894.

obtained the abdomen had become so distended that it was thought impossible to return the bowels without opening them with the knife, if a section of the abdomen were made. It was, therefore, necessary to wait for three weeks until, with great difficulty, the peritonitis had been somewhat subdued and the vomiting was stopped. Finally a cœliotomy was done and a pair of distended tubes and ovaries were dug out from the many layers of densely organic adhesions. Thick yellow pus poured from the cut ends after they were placed on the tray. The stumps at the uterine cornua were cleansed with a solution of bichloride of mercury, the abdomen was thoroughly flushed with hot water, and a drainage tube was inserted, but was only left in for twenty-four hours, being no longer required. The pain in the pelvis which she had suffered so many years disappeared after the operation, and the woman made such a good recovery that she was up in four weeks, walked down stairs in five weeks, and in six weeks was nursing her daughter, performing with alacrity the work which this entailed.

On examination, the tubes and ovaries of both sides were found to be glued together into one mass the size of a large hen's egg. When placed in water the fringe of torn adhesions was clearly seen. No amount of dissection apparently would have been sufficient to separate the ovary from the tube without tearing the latter. A cross section of the tube near the uterine end showed that while the calibre of the canal was almost obliterated, the walls were very much thickened, the muscular layers being replaced by white fibrous tissue. The glandular and epithelial structures had been destroyed, while the mesosalpinx was very much thickened by the deposit of inflammatory exudation from the tube.

Case II. The next specimens were removed from a Mrs. A., 29 years of age, whose troubles date from a miscarriage which she had nine years ago, never having had any children. She had severe dysnænorrhœa ever since, so severe

that ordinary doses of anodynes had no effect in relieving her. Bimanual examination revealed the uterus in normal position, but Douglas' cul de sac was found to be filled with two round hard masses, very sensitive to the touch, which were thought to be the tubes and ovaries united together. As she was anxious to have children and declined to have the ovaries removed, palliative treatment was tried for several weeks with some benefit, but three months later she was worse than ever, and demanded a radical operation, which was performed on the 19th of April. The distended tubes, which were firmly cemented to the ovaries, were as large as hen's eggs, and required a long and forcible dissection with the fingers before they could be lifted to the surface. The abdomen was flushed and drained, and the woman made an uneventful recovery, getting up on the twenty-first day and going home on the 23rd of May.

She assured the operator, the day after the operation, that the pain she had had for nine years had entirely disappeared.

Case III. Mrs. M., 26 years of age, had been under the reader's care for several years for menorrhagia and dysmenorrhœa. Although married three years she had never been pregnant. She had to have morphine at every period, other anodynes having failed to relieve her. At every second period even large doses of morphine proved ineffectual ; she was seen on several occasions when her suffering was certainly agonizing. Rapid dilatation was performed twice at intervals of three months with only temporary relief, but at the end of six months she was as bad as ever, so it was determined to remove the appendages, which was done at her home on the 22nd March, 1894. This case was remarkable for two things ; the short convalescence, and the fact that one tube was completely sealed up while the other had a beautiful pavilion. She could not afford to have a nurse, but had her sister to attend to her for a couple of weeks. This sister had very little control over her, so that she insisted upon getting up at the end of a week. The doctor called unexpectedly on

the tenth day and found her rocking herself before the kitchen fire. In spite of being scolded she got up to stay up on the fourteenth day, but fortunately the silk worm-gut stitches remained in for one month. It would appear from the examination of the two tubes that the very severe dysmenorrhœa every second month was due to the absolute closure of the fimbriated extremity of the tube of that side on which the ovum matured, while the somewhat less painful period every other month took place from the ovary, on the side on which the tube was patent.

Case IV.—Mrs. F., an emaciated and sallow looking woman, thirty-five years of age, who had been married eleven years without ever having become pregnant, probably for the reason that two weeks after her marriage she had an attack of pelvic peritonitis, from which she nearly died. She was five weeks in bed with it, and it was three months more before she was able to get about. That was eleven years ago, and since that time she has had slight attacks of pelvic peritonitis about four times a year, which kept her in bed about a week each time, Her bowels have always been confined, generally moving only once in eight days and defecation being very painful, as was also coitus, which generally caused her to faint away. A bimanual examination revealed an irregular shaped and slightly fluctuating mass filling Douglas' cul de sac, the diagnosis of pus tubes and ovaries was made, and their removal strongly advised. Cœliotomy was performed at Dr. Lapthorn Smith's private hospital on the 13th April, the operation requiring nearly an hour of hard work owing to the density of the adhesions. The drainage tube was required for thirty-six hours. No morphine was needed, the patient having stated that the pain which she had had for eleven years had entirely gone since the operation. She was out of bed in two weeks and went home on the twenty-first day.

Case V.—Mrs. R., aged 24, mother of one child, 3 years old, since the birth of which she has never been well. She

had a miscarriage four months ago, and bled steadily for a month afterwards. For this she came under the writer's care. On examination the uterus was found to be large and retroverted, with the tubes large, hard and tender, lying behind it. Lest there might be some retained placenta, the uterus was thoroughly curetted with the sharp curette which, however, only brought away the thickened and spongy endometrium. It was swabbed out with Churchill's iodine and packed with iodoform gauze. She declined at this time to submit to removal of the appendages, although she was informed that she was in constant danger of them rupturing. She was told to send for the doctor immediately if she should be ever taken with sudden pain, as the operation would have to be done at once to save her life. Nothing was heard from her for several months, when one day an urgent message was received to come at once, her husband stating that the abscess must have burst, as she had suddenly complained of a terrible pain in her side, and soon after she had fallen on the floor unconscious. He ordered her to be brought immediately to his private hospital, preparations being made without delay for an abdominal section. When she arrived she was in a condition of profound shock, having no pain, but her pulse being fast and thready. As soon as she could be prepared, the abdomen was opened, and at the first nick in the peritoneum an ounce of thin yellow pus flowed out. The tubes and ovaries were dug out of their bed of adhesions with considerable difficulty, there being a hole in the tube where the pus had escaped. The tubes, an inch from the uterus, were thickened to the size of the thumb, consisting almost entirely of solid fibrous tissue of very brittle consistency. Beyond that point the tubes were thinned out to form an abcess cavity. The peritoneum was cleaned in the usual way and a tube inserted, from which in the course of the first day eight ounces of serum were removed. She also made a good recovery, stating that her pain had disappeared after the operation, and getting up in two weeks and going home in three.

The reader of the paper remarked that these five cases were almost exactly like each other, and differing very slightly from about twenty others on whom he had operated. He stated that he had about forty other similar cases under his care during the last ten years, all of whom he thought would eventually come to an operation, although he had not so far been able to convince them of its necessity. A few of them had remained fairly comfortable for as long as two years at a time without treatment, and then they would have a pretty sharp attack of pelvic peritonitis. Of course the longer they delayed the more adhesions there would be and the more difficult the operation. He had no apology to make for having performed these operations, as all of these women had been almost constant sufferers for from two to eleven years. On the contrary he thought it was his duty, as it was the duty of every practitioner, to diagnose these cases as early as possible, and to urge the removal of the appendages at the earliest possible moment. No one could be more averse than he was to removing an otherwise healthy organ for functional disease, but in the light of his experience with pus tubes and ovaries, he felt that he had in the past rather erred on the side of ultra-conservatism, a fault which he promised he would not be guilty of in the future. The operation in his experience was much less dangerous than would be supposed, it being rare for the convalescence to cause any anxiety. This immunity from peritonitis, even when the tube had burst and inundated the bowels, he attributed to the tolerance which the peritoneum acquires after several inoculations with gonococcic or staphylococcic virus. So that while they were among the most difficult, they appeared to be among the safest of abdominal operations. He had generally found with his fingers in the abdomen that the condition of affairs was much worse than it had appeared to be by bimanual examination. The organs being organically diseased and their function destroyed, and being moreover a constant menace to the patient's life, he felt that we should have no hesitation in removing them.

Reviews and Notices of Books.

Transactions of the Association of American Physicians. Ninth Session. Held at Washington, D.C., May 29th, 30th, 31st and June 1st, 1894. Volume IX. Dr. I. Minis Hays, Recorder, Philadelphia.

This volume contains the following articles:

The Rise and Fall of the Licensed Physician in Massachusetts, 1781-1860. By Reginald H. Fitz, M.D., of Boston.

The Treatment of Certain Symptoms of Croupous Pneumonia, Particularly in Adults. By Beverley Robinson, M.D., of New York.

A Treatment of Typhoid Fever. By Samuel A. Fisk, A.M., M.D., of Denver, Colorado.

Cases of Traumatic Headache. By Charles F. Folsom, M.D., of Boston Mass.

Clinical Report of Two Cases of Raynaud's Disease. By Frederick P. Henry, M.D., of Philadelphia.

Investigations upon Cow-pox. By Stephen C. Martin, M.D. Presented by Harold C. Ernst, M.D., of Jamaica Plain, Mass.

Modification, Temporary and Permanent, of the Physiological Characters of Bacteria in Mixed Cultures. By Theobald Smith, M.D., Chief of the Division of Animal Pathology (Bureau of Animal Industry) of the U.S. Department of Agriculture; Professor of Bacteriology and Hygiene in the Medical Department of the Columbian University, Washington, D.C.

Notes on the Observations of Malarial Organisms in Connection with Enteric Fever. By W. Gilman Thompson, M.D., Professor of Physiology in the Medical Department of the University of the City of New York; Physician to the New York and Presbyterian Hospitals.

Experiments in Artificial Melanosis. By George Dock, M.D., of Ann Arbor, Mich.

On Lead Palsy in Children; with a Report of Three Cases. By Wharton Sinkler. M.D., of Philadelphia.

Apoplexy in its Relation to the Temperature of the Body.

With a consideration of the Question of Heat Centres. By Charles L. Dana, M.D., Professor of Nervous and Mental Diseases in the New York Post-Graduate Medical School; Visiting Physician to Bellevue Hospital.

The Frequency of Renal Albuminuria, as shown by Albumin and Casts, Apart from Bright's Disease, Fever, or Obvious Cause of Renal Irritation. By Frederick C. Shuttuck, M.D., of Boston.

Experimental Phthisis in Rabbits with the Formation of Cavities—A Demonstration. By T. M Prudden, M.D., of New York.

A report of the Ultimate Results Obtained in Experimental Eye-Tuberculosis by Tuberculin Treatment and Anti-tubercular Inoculation. By E. L. Trudeau, M.D., of Saranac Lake, N.Y.

The Effects of Various Metals on the Growth of Certain Bacteria. By Meade Bolton, M.D., Associate in Bacteriology, Johns Hopkins University.

Some of the Chemical and Bacteriological Characteristics of Milk. By T. M. Botch, M.D., of Boston, Mass.

Osteomalacia, with a New Case. By Geerge Dock, M.D., of Ann Arbor, Mich.

The Mild Character and Diminished Prevalence of Syphilis, and the Infrequency of Visceral Syphilis. By J. H. Musser, M.D., of Philadelphia.

The Compensatory Changes in the Right Ventricle in Mitral Stenosis. A Case with Hypertrophy, but Without Dilatation; Death from Hæmoptysis. By Alexander McPhedran, M.B., Associate Professor of Medicine, University of Toronto; Physician to the Toronto General and St. Michael's Hospitals, and the Victoria Hospital for Sick Children.

Cough Induced by Posture, as a Symptom Nearly Diagnostic of Phthisis. By Norman Bridge, A.M, M.D., Professor of Clinical Medicine, etc., in Rush Medical College, Chicago. (Los Angeles, Cal.)

Gastro-enteric Rheumatism. By Henry M. Lyman, A.M., M.D., of Chicago, Ill.

The Chemical Products of the Anaërobic Putrefaction of Pancreatic and Hepatic Tissues, and their Effects upon the Tests for Morphine. By Victor C. Vaughan, M.D., of Ann Arbor, Mich.

Tetany in America. With a Report of Five Cases. By J. P. Crozer Griffith, M.D., Clinical Professor of the Diseases of Children in the University of Pennsylvania; Professor of Clinical Medicine in the Philadelphia Polyclinic; Physician to the Children's Hospital, etc.

Stomatitis Neurotica Chronica. By A. Jacobi, M.D., of New York.

Diseases of the Skin. An outline of the principles and practice of Dermatology. By MALCOLM MORRIS, Surgeon of the Skin Department, St. Mary's Hospital, London; etc. With 8 chromo-lithographs and 17 wood-cuts, pp. 556, Lea Brothers & Co., Philadelphia, 1894.

Of the many smaller books which have appeared lately on this subject, the present volume is one of the best. It is essentially a practical handbook for clinical work and consequently is not to be compared to the larger works, inasmuch as the theories of causation of disease are largely omitted and the matter is necessarily condensed. The author is already well known, through his contributions to the current literature of the subject, as a skilled worker in the field of Dermatology and the arrangement of his book shows that he understands what is required in a volume of the character of the one he has published.

Regarding classification he says "No formal scheme of classification is propounded, but an attempt is made to group the diseases described in accordance with the tendency of modern pathological research--that is to say, etiologically." This is no doubt the best way to put the matter at present, for so many of the diseases described are as yet so little understood that classification is difficult if not impossible. The chapter on the principles of diagnosis is a special feature of the book and will be found of great use. The descriptions of the various diseases are short and to the point, those which are commonly met with being given more space and attention than the rarer forms. The whole is illustrated by 8 coloured plates giving representations of 19 forms of skin disease, as well as a number of wood cuts.

Teratologia: Quarterly Contribution to Antenatal Pathology. Edited by J. W. Ballantyne. Vol. 1, No. 2. Published by Williams & Nirgate, London.

Those who are interested in this much neglected field of

pathology will owe a debt of gratitude to Dr. Ballantyne for bringing out a new journal devoted to the study of diseases and malformations of the fœtus. One valuable feature of the new journal is the review of current literature, which is very complete and well arranged, and this alone would make it a valuable work of reference. At present any one wanting to look up some point about pathological conditions of the fœtus is obliged to search through an endless series of books, journals and reviews on Obstetrics, Pediatrics, Anatomy, Physiology, Pathology, Histology, Embryology, Heredity, etc., and is in the end uncertain whether the information sought is not concealed after all in some journal on general medicine. The original matter of the number before us is interesting and well illustrated.

Index Catalogue of the Library of the Surgeon General's Office, U.S.A. Authors and subjects Vol. XV. Washington Government Printing Office, 1894.

This most useful work is now approaching completion, the present volume bringing the matter down to the letter V. It contains over six thousand author titles and nearly nine thousand titles of books and pamphlets, as well as a great number of titles of articles in medical journals. This gives some idea of the scope of the work; of the way in which it has been carried on, nothing need be said, beyond saying that the present volume is similar to those previously issued.

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Leprosy. By Isadore Dyer, Ph. B., M.D. Reprinted from the May, 1894, number of the Texas Medical Journal.

Report for the Year 1893-94. Presented by the Board of Managers of the Observatory of Yale University to the President and Fellows.

Teno-Suture and Tendon Elongation and Shortening by Open Incision: Advantages and Disadvantages of the Various Methods. By H. Augustus Wilson, M.D. Reprinted from International Clinics, Vol. 1., Fourth Series.

Report on the Leprosy Question in Louisiana. By Isadore Dyer, Ph.B., M.D. Reprinted from the Proceedings of the Orleans Parish Medical Society, June Meeting.

The Uric Acid Diathesis and Its Treatment. By John F. Barbour, M.A., M.D. Reprint from the American Therapist, June, 1894.

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Canadian Medical Literature.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL.]

PERIODICALS—JULY, 1894.

CANADIAN PRACTITIONER.

(1.) Case of Cholecystotomy for Obstructive Jaundice—R. Whiteman, p. 479.

Some phases in the management of consumption—E. H. Adams, p. 485.

(2.) A Case of lumbar hernia—F. N. G. Starr, p. 491.

(3.) A case of cerebral glioma—J. E. Graham, p. 503.

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Hip joint disease—W. W. Bremner, p. 443.

Proceedings at the meeting of the Ontario Medical Council—(*Continued*), p. 448.

MARITIME MEDICAL NEWS.

Hysteroraphy, or ventral fixation of the uterus, with four successful cases—E. Farrell, p. 323.

Antipyretics—F. W. Goodwin, p. 326.

The Fullerton inquest, pp. 334 and 338.

DOMINION MEDICAL MONTHLY.

(4.) Uncured Gonorrhœa, its causes and sequences—E. H. King, p. 1.

Case of placenta prævia centralis—J. Campbell, p. 5.

Case of typhoid fever—Wm. Glaister, p. 8.

L'UNION MEDICALE DU CANADA.

De la vaginotomie postérieure—M. T. Brennan, p. 337.

De la vaccination faite antiseptiquement—M. T. Brennan, p. 337.

Entérocèle vaginale—C. A. Daigle, p. 339.

CANADA LANCET.

(6.) Notes on a case of biliary calculi—G. T. Orton, p. 324.

The uses and abuses of the nitrites—Jas. Newell, p. 327.

CANADA MEDICAL RECORD.

Demonstration of intestinal anastomosis with the Murphy button—A. Lapthorn Smith, p. 217.

JOURNAL d'HYGIENE POPULAIRE.

(7.) Un cas de mort après vaccination, p.

BRITISH MEDICAL JOURNAL.

(8.) A note upon chlorosis in the male—C. F. Martin, p. 123.

(1.) Dr. Whiteman reports a case of cholecystotomy in a man aged 54, who had suffered for 4 months from severe

jaundice with some emaciation. The gall bladder, which was greatly enlarged, was first secured to the abdominal wall, and a trocar then inserted. About one and a half pints of dark green tenacious bile ran out. No evidence of gall stone or tumour could be made out. After the operation, the jaundice gradually disappeared, about 20 to 40 oz. of bile escaping daily from the fistula. He became better for a couple of months after the operation, but then began to fail and died 5 weeks later. An autopsy showed a cancerous tumour in the duodenum near the orifice of the common bile duct.

(2.) In Dr. Starr's case the patient was seized with a stitch in the side when lifting a heavy weight and had noticed a lump in the back ever since. The swelling was as large as a duck's egg and situated in the right lumbar region above the crest of the ilium. It was tympanitic and readily reducible on palpation.

The same patient also had a small hernia, the size of a marble below the ensiform cartilage.

(3) Dr. Graham reports the case of a man who presented symptoms of motor aphasia with slight paralysis of the right arm and right side of the face. There was a history of a severe blow on the head four months before; while apparently doing well in hospital he developed fever with delirium and died in a few days. At the autopsy a glioma, the size of a large walnut was found in the region of the right internal capsule surrounded by an area of acute cerebritis.

(4.) Dr. King emphasizes the infectious nature of old-standing cases of gleet and gives instances where upon marriage this has led to severe pyosalpinx and pelvic cellulitis. It may be mentioned that the author considers no cases of gonorrhœa cured after the discharge has ceased, unless the urine remains clear of shreds for at least two weeks after the last injection. He recommends the use of a blunt pointed syringe holding at least half an ounce of fluid which should be injected with sufficient force to distend the whole urethra. The ingredients of the fluid, provided it is not too strong and irritating, are of less importance than the manner of using it.

(5.) Dr. Brennan emphasizes the necessity of observing strict antiseptic precautions in all cases of vaccination.

(6.) Dr. Orton reports a case of biliary calculi where cholecystotomy was performed. Several large calculi were found lodged so firmly in the cystic and common ducts that they could not be dislodged. The patient died on the fourth day after the operation.

(7.) A report is given of the inquest recently held in Montreal which was referred to in our editorial columns last month.

(8.) Dr. Martin reports four cases of chlorosis in the male in all of which the number of red corpuscles was normal, while the proportion of hæmoglobin considerably diminished. In the first case, age 27, there were 5,300,000 red corpuscles per cubic milimeter and the hæmoglobin was 68 per cent by Fliechl's apparatus. In the second case, age 27, the red cells were 5,300,000 and the hæmoglobin 72 per cent. The third case, aged 25, gave hæmoglobin 77 per cent and red cells 6,030,000. In the fourth case the hæmoglobin was at 77 per cent and the red corpuscles 4,800,000. In all these cases there were symptoms of dyspepsia and constipation, and all improved upon treatment with arsenic and iron.

Dr. Martin thinks that chlorosis is not, as has hitherto been assumed, a rare disease among males.

Selections.

Indicanuria as a Symptom of Latent Suppuration.—Indican, in small quantities, is a normal constituent of healthy urine, but under certain circumstances the amount is so large as to merit the designation of indicanuria. This condition is usually dependent on decomposition of the intestinal contents consequent on constipation; but it has recently been discovered in the urine in connection with the formation of pus in such quantities as to authorize the belief that its presence may afford an important indication of latent suppuration. The first thing, of course, is to eliminate the intestinal tract as the source of the indicanuria, and this is done by the administration of naphthol, bismuth, or other disinfectant. Should chemical analysis still reveal the persistence of the indicanuria, there is reason to suspect suppuration. In several cases observed by Dr. Keilmann, of Dorpat, the information thus obtained led to a successful search being made for foci of suppuration, the indicanuria subsiding as soon as the pus was evacuated. The analysis is simple enough to admit of its application by every one, which is more than can be affirmed of many of the tests proposed by laboratory physiologists. Equal quantities of urine and strong hydrochloric acid are shaken together in a test tube, and a little chloroform is added. In the presence of indican this becomes blue from the indigo liberated by the decomposition of the indican, and falls to the bottom of the tube. A fair idea can thus be readily obtained of the amount of indican present, but for purposes of diagnosis it is necessary to resort to a quantitative analysis. This does not involve much additional trouble, advantage being taken of the bleaching powers of hypochlorite of calcium, a standardized solution of this salt being dropped into the above mixture until complete decoloration results. Three or four drops of a five per cent. solution may suffice for this purpose, but in some cases as much as fifty, or even eighty, drops may be required.—*Medical Press and Circular.*

A Therapeutic Retroversion.—In the good old days of Edward the Second or Third, John of Gaddesden was court physician. He was the first doctor in England to win this high distinction. The honour was probably not unworthily bestowed, for he was an Oxford man, and doubtless knew what little was known of medicine in his time.

He lived at a time when medicine was a curious mixture of fact, fad, fiction, and folly, when the demon theory of disease was accepted for truth, when the hearts of nightingales were prescribed for loss of memory, when lunatics and epileptics were treated by causing the patients to fast, hear masses, and to wear about their necks appropriate texts of Scripture on certain holy days, and when the therapeutic efficacy of amulets, charms, and prayers was never doubted by the best physician.

This John of Gaddesden wrote a quaint old book, the *Rosa Anglica seu Practica Medicinæ*, wherein the following measure is recommended in the treatment of smallpox: So soon as the eruption has appeared, "Cause the whole body of your patient to be wrapped in scarlet cloth, or in any other red cloth, and command every thing about the bed to be made red. This is an excellent cure." Sir Thomas Watson, commenting upon "the erroneous principle," with results "eminently disastrous," upon which in the olden time the treatment of smallpox was conducted, says:

The eruption they considered to be the natural and only cure; and adopting the vulgar maxim, that "it was better out than in," they did all they could to promote a copious eruption by a hot regimen, by covering the patient with bed-clothes, by keeping the doors and windows jealously closed, and excluding every breath of fresh air, and sometimes by administering wine and cordials. The celebrated John of Gaddesden . . . improved even upon this. He surrounded the half-suffocated patient with red curtains, red walls and red furniture of all kinds; every thing he saw was to be red; for in that colour there was, he pretended, a peculiar virtue. This John of Gaddesden, by the way, was a very sad knave. . . . He had one medicine so good

as to be fit for the rich only; and he recommended a double dose for the wealthy: "*Duplum sit, si pro divite.*"

Sydenham was the first, in this country, to employ the opposite or cool regimen in smallpox; and although his prejudiced contemporaries refused to follow his example and adopt his practice, he confidently predicted its final triumph. "*Obtinebit demum me vitâ functo.*"

In the light of these historical reminiscences the following, which we clip from the New York Medical Record (17th inst.), is most interesting:

"RED LIGHT FOR SMALLPOX.—Finsen (Hosp. Tid., No. 27, 1893), has made some observations on the effects of light on the skin. He referred to the good results obtained by Black and others by the exclusion of daylight in the treatment of smallpox, but argued that, as Widmark has shown that it is the ultra-violet rays which have the strong chemical action, it is not necessary to exclude the daylight, but by using red curtains tightly drawn, or red window panes, the injurious effects of the light can be prevented. The correctness of this hypothesis was proven by Svendsen, of Bergen, who last summer treated four cases of smallpox in unvaccinated patients by covering the windows with thick red woollen curtains. The patients escaped the suppurative stage; there was no rise of temperature, no œdema. The patients passed from the vesicular stage, which was slightly prolonged, into convalescence, and escaped scarring."

In this connection the verse of old John of Gaddesden's contemporary, Chaucer, is apt indeed:

> "For out of the old fieldes, as men saithe,
> Cometh all this new corn from yere to yere;
> And out of old bookes, in good faithe,
> Cometh all this new science that men lere."

The moral of this is, that inasmuch as things are found to be so by experience long before science comes and tells us why they are so, much that seems silly in the practice of olden times may be found by science to have good foundation in fact.

The old masters in music made all their wonderful blendings of melody, harmony, and orchestration long before the physicists knew why they wrote as they did, and while the analogy

is incomplete, we may expect medical science to justify much of the practice of the fathers in medicine.

The solar spectrum tells us why John of Gaddesden made things red around a smallpox patient; bacteriology (asepsis) tells why the traditional midwife burns the hole in the compress that goes over the cord of the new-born infant; the marvelous effects of thyroid gland injected or ingested in myxedema tells us how results may have been obtained through the administration of the viscera or glands of various animals in some affections; while hypnotism, to say nothing of other phases of psychic science, may yet redeem from scorn the superstitious belief of the ancients in stella strokes, demoniacal possession, doubles, ghosts, and witchcraft, and their faith in the therapeutic efficacy of charms, characts, amulets, fasts, sacred verses, and prayers.—*American Practitioner and News, March* 24, 1894.

The Production of Vaccine Virus.—(Report of a committee of the Norfolk District branch of the Massachusetts Medical Society.)—Your committee have visited the two principal depots from which the vaccine stock is supplied to this section, namely, the New England Vaccine Company's operating-rooms in Chelsea, and the operating-rooms of the late Henry A. Martin, M.D. We were welcomed with gentlemanly courtesy and attention at both places, where the processes were freely shown and explained. We have also had freely given from Codman & Shurtleff a description of the process pursued by them at their farm in Stoughton, which we were cordially invited to visit. Also, I will state that, at the meeting of the Norfolk District Society where this report was originally made, Dr. Francis C. Martin made some remarks in regard to the course pursued by him at his establishment.

At Chelsea we found buildings well adapted for the purpose—a stable so built with cemented floors, gutters and walls, that it could be thoroughly flushed; and it had evidently so been, for not a particle of stable *débris* was present. Leading from this

stable, separated by an entry and double-doors, is the operating room proper. This room has a floor of artificial stone, tiled walls, and is heated by steam. It is furnished with sets of stanchions in which to securely and comfortably confine the cattle undergoing the operations, and with a closet of fine-wire gauze, for the drying of the freshly charged points, admitting the air but excluding the coarser particles of dust. This room can also be thoroughly flushed, and it is claimed that it is so treated with antiseptic solutions from time to time. There is an evident intent to preserve the appearance, at least, of asepsis, but one notices a carelessness of the employés in handling the charged points, etc., with hands which are certainly not surgically aseptic. Whether this comes from ignorance of what science has a right to demand in such a process, or whether it is the carelessness which familiarity with routine work almost necessarily begets, I do not know. In regard to the results I will speak later.

The operating-room at the Martin establishment is an ordinary room opening directly from the carriage-house of the stable. This room has wooden floor and walls, and has no conveniences whatever for producing aseptic conditions other than such as accompany ordinary cleanliness. Mr. Reed told us they made no pretensions to do more.

The process of securing the lymph at the two establishments differs in many ways. At the New England, they use mature animals, about four years old. These are vaccinated on the back of the buttock and on one side of the belly, in small patches about three-fourths of an inch square, which do not materially enlarge in development. At the New England establishment the animal while undergoing operation remains standing, confined by a set of stanchions. At the Martin establishment the work is done upon the animal lying on its side, and strapped to a table. At Codman & Shurtleff's, and at Dr. Francis C. Martin's, the age of animals and the process are practically the same as at the Martin stable in Brookline.

At the first glance at the animal vaccinated and ready for use, the sight is repulsive, and the broken-down, suppurating

crust seems a most disagreeable thing to inoculate into the human organism. These crusts and their accompanying *débris*, you are told, are ground up with glycerine and regularly dispensed as vaccine stock in some foreign countries. *Here* the crust and all loose tissue are removed, thus exposing the base of the vesicle. At the New England institute, this, with the surrounding skin, is thoroughly washed with a sponge and clean water, and after a few minutes the serum exudes and, the animal standing in an upright position, trickles down to the lower edge of the patch from which it is taken upon the points. The first flow is a little discolored with blood, and is kept to revaccinate new animals with. After a while the flow of serum is obtained perfectly clear and of a slightly yellowish shade. By this method, at the New England institute, the points are not brought at all in contact with the raw surface but receive the lymph as it trickles down to the second skin. The points are then laid upon a nickel-plated metal tray, channelled and adapted for the purpose. When the tray is filled, it is placed inside the gauze closet to dry.

At the Martin establishment, as I have said, the vesicles are individually smaller, and, after having been freed from the crust, are not washed but are wiped with a towel which seems to have done some service in the same direction before. From these vesicles, there being less tension of the tissues than where the patches are larger, the lymph does not exude itself but is squeezed out by compression of the base with forceps, and the points are charged directly from the denuded surface; therefore all are more or less discolored with blood. At the New England establishment the points having been received from the factory are sterilized before being charged—subjected for an hour to a temperature of 212°. At the other place, as I have said, no attempt at asepsis is made.

At Codman & Shurtleff's establishment the process is similar to that at the Martin, except that, instead of dipping points into the lymph exuding from the raw base of the vesicle, the lymph is collected in little glass cups, and any *débris* present in it is allowed to settle or is skimmed off, after which the points are charged with the clear lymph.

Now, while neither of these processes approach what we know as surgical asepsis, yet the fact remains that we never hear of septic inflammation setting in within a *few hours after vaccination*, which it surely would do if septic matter were directly introduced into the system; so that we must believe that the charged points are not septic even if the process of preparing them is not ideal.

On the other hand, when suppuration does occur, it sets in as a secondary result to the mature vesicle. This it is claimed, and justly it would seem, is due to atmospheric germs having found their way within the ruptured capsule of a broken vesicle. Therefore, when this occures in this secondary manner, it is after the vaccinia has been produced, and it does not, as is sometimes claimed, interfere with the protective power of the vaccination. The resulting sore should therefore be treated antiseptically from that time on, and healed as soon as possible.

Dr. Cutler, at the head of the New England establishment, maintains that a small vesicle should always be obtained, and that, from the commencement, it should be kept as dry as possible, no moist or oily dressing ever being used. A small vesicle produces less inflammation—and so less necrosis of subjacent tissue, less areola, and so less constitutional disturbance. Moreover, it is far less liable to crack and rupture. He claims that the size and accompanying characteristics of the vesicle may be absolutely determined by the size of the original scarification, which had better be a mere puncture, and never should exceed one-sixteenth of an inch in diameter. There should be two or three of these vesicles situated nearly two inches apart, so that they may never become confluent with one another. He exclaimed, "It was a bad day when we were taught to scarify instead of the old-style puncture." His explanation of this and of his theory that a large scarification makes a confluent and highly inflamed vesicle is, that, while it is necessary to spread the inert virus obtained from calves over a large scarification, to get any result—uncertain at best—the lymph obtained from mature animals is richer in germs which become implanted all over the scarification and start numerous colonies, each a

nucleus of vesicles which, as they grow, coalesce until they form the large confluent vesicle.

In conclusion, your committee are inclined to believe, from the limited observation which they have been able to make, that the New England virus is the more active and therefore the more dangerous virus to use; that the Martin virus is not as active and consequently may be the safer for general use. In reference to this the New England people state that the danger of excessive result should not be laid at the door of active virus, which is necessary to fight an epidemic with, but is due to the ignorance of the proper technique of vaccination among some members of the medical profession, and especially among laymen who often do not hesitate to perform the operation. On the other hand, the late Dr. H. A. Martin has maintained that the serum from the large confluent vesicle on the cow, with its higher degree of inflammation, is alone responsible for the greater degree of irritation in the human subject. Your committtee believe that these points can only be settled by a more careful attention, on the part of physicians, to the technique of the operation, and an observation of subsequent results.

Further, your committee are led to the positive belief that the whole subject of preparation of vaccine stock should not be left in the hands of rival commercial companies, but should be wholly under the official control of either city or State.—D. D. GILBERT, M.D., *in the Boston Medical and Surgical Journal*, 3*rd May*, 1894.

Report of the Committee on "Prevention of Blindness through Legislative Enactment."—(Presented at the 128th annual meeting of the Medical Society of the State of New Jersey.)—At the Meeting of the Medical Society of New Jersey, held at Asbury Park, June, 1893, a paper entitled "The Present Status of Legislation for the Prevention of Blindness" was presented, and the following resolutions were unanimously adopted: Resolved, That a committee of three be appointed to consider the question of Legislation for the Prevention of Blindness, to report at the next annual meeting of the society.

Your committee would respectfully report that action favoring such legislation for the prevention of blindness is under way in a large number of States, and that in six States, i. e., New York, Maine, Rhode Island, Minnesota, Ohio and Maryland, laws have already been enacted making it a criminal offense punishable by fine and imprisonment, of any person or persons neglecting to comply with them.

The census returns for 1890 indicate a total of 50,411 hopelessly blind in the United States; of these, 27,983 are males, 22,458 are females; 43,351 are white, 7,060 are colored; 41,265 are natives, 9,146 are foreigners.

It is estimated that nearly twenty per cent. of all blindness occurring in early life is dependent upon ophthalmia neonatorum; it has been shown that the disease may be almost absolutely prevented by prophylactic treatment, and that when ophthalmia neonatorum does occur and the inflammatory processes resulting have involved the cornea, it is a disease which frequently results in complete destruction of the eyes.

When a qualified practitioner of medicine can be placed in charge of a case at the onset of the disease, and an active antiphlogistic and curative treatment at once adopted, the prognosis is favorable to an ultimately satisfactory recovery. Hence the necessity of placing all sufferers from this affection under appropriate and skilful medical treatment by "legislative enactment."

Legislation directed at such cases compels attention; and, requiring immediate report of all midwives, nurses and attendants cannot fail to accomplish much good, as all of the fallacies regarding the etiology of the disease from cold, the treatment by the application of breast milk and the numberless remedies advised by ignorant "knowalls," will be relegated to a well-earned obscurity.

That prophylactic treatment will reduce the percentage of cases of ophthalmia neonatorum occurring to the minimum is acknowledged, and easy of demonstration, by a study of the literature, some authorities claiming that it will only occur in about two-tenths of one per cent. of all deliveries against at least ten per cent. of all cases when no prophylaxis has been adopted.

The method of Crede, is recommended by the committee for use after all deliveries. The treatment is simple and is unattended by any danger. It consists in carefully washing the eyes immediately after delivery with a soft linen cloth dipped in plain tepid water, which has been used for no other purpose, and the instillation of a single drop of a two per cent. solution of argent. nit., which is allowed to fall from a pipette immediately upon the cornea. The lids are then closed.

That in cases of ophthalmia neonatorum once developed, prompt treatment frequently results in preventing corneal infection and subsequent loss of the eyes is undisputed. When a purulent secretion is present the eyes should be cleaned frequently enough to keep them free from pus. The period of time between such cleansing should never at any time of the day or night be longer than one hour, and should, if necessary, to keep the eyes free from pus, be as frequent as every 10 or 15 minutes. The lids should be gently separated by the fingers, care being taken, especially if there is any suspicion of corneal infection, not to make any pressure on the globe. The accumulated pus is to be removed carefully with a pledget of cotton dipped in tepid water, or preferably a tepid solution of hydrargyrum bichloride, one to ten thousand. The inflamed conjunctiva should never be wiped with the cotton, the pus being either removed by flushing the eye with water squeezed from it or by gently patting the everted lid, if necessary. The palpebral conjunctiva should each day receive an application of a solution of argent. nit., varying in strength with the period of and severity of the disease—argent. nit. gr. v. to XL. aqua dest. oz. 1.

In the early stage of the disease, the bathing should be very frequent and the applications thoroughly accomplished in order that corneal infection may be prevented, as the probability of corneal infection is lessened after the acute phases of the disease are controlled. If the inflammation is very acute ice cloths are, if they can be kept in position, of service and very grateful to some patients. If solutions of argent. nit., stronger than gr. x to the ounce are used the lid should be immediately bathed

with a mild saline solution to neutralize the silver and prevent erosion of the cornea.

If the cornea becomes affected sulphate of atropia gr. 1 to the ounce of aqua destil., should be instilled, one drop three or four times a day, or if the corneal ulceration be peripheral, sulphate of eserine gr. ¼ to the ounce aqua dest., may be used, one drop three or four times a day.

If the secretions diminish on the third or fourth day of the treatment, renewed vigilance should be recommended on the part of the attendant, in order that a probable relapse may be prevented, from which recovery is often very slow and which is invariably more difficult to control than the primary infection, and quite apt to be followed if it does occur by corneal ulceration.

In every case of purulent eye disease each person who may have occasion to handle the purulent secretion should be especially warned to thoroughly cleanse and disinfect the hands after every contact with the infectious products, and to destroy by burning all cotton or cloths used in bathing the eyes.

A circular letter, directing the attention of the medical profession throughout the United States to the subject of legislation for the prevention of blindness resulting from ophthalmia neonatorum, was issued by the committee appointed by the American Medical Association at the annual meeting in 1893.

The following draft of a bill for the prevention of blindness resulting from ophthalmia neonatorum, which was enclosed with the circular, is recommended by the committee for the approval of the society, and for subsequent adoption by the Senate and General Assembly of our State. "A bill for the prevention of blindness in the State of New Jersey."

The people of the State of New Jersey represented in Senate and Assembly, do enact as follows :

Section 1. Should one or both eyes of an infant become inflamed or swollen, or reddened at any time within two weeks after its birth, it shall be a duty of the attendant midwife, nurse, or attendant having charge of such infant, to report in writing, within six hours, to the health officer or some legally qualified practitioner of the city, town or district in which the parents of the infants reside, the fact that such inflammation or swelling or redness of the eyes exists.

Section II. Any failure to comply with the provisions of this act shall be punished by a fine not to exceed two hundred dollars, or imprisonment not to exceed six months or both.

Section III. This act shall take effect on the —— day of ——, eighteen hundred and ninety——

The committee would recommend a section in addition to the above, compelling the parents or relatives of an infant suffering from a purulent discharge from the eyes to place it immediately in charge of some legally qualified practitioner of medicine, or of the city or district physicians if unable to employ a family physician.

Although the committee have not considered it desirable at this time to incorporate with this present proposed enactment any methods of legislation regarding the prevention of blindness from other sources than ophthalmia neonatorum, they cannot refrain from enumerating some of the other sources of danger which might be possibly considered as susceptible of management by the State and local health boards.

Blindness as a result of trachoma and all blenorrheal communicable eye diseases, conveyed by the carrying of the germs of the disease or by the actual inoculation of the ocular or palpebral conjunctiva with the products of the inflammatory action may certainly be lessened by the adoption of ordinances by health boards and by assistance from the State Board of Medical Examiners.

Ordinances should be enacted prescribing regulations compelling in all public lavatories, whether located in hotels or other places, a strict observance of necessary sanitary precautions, scientific plumbing, especial care regarding the linen, and entirely forbiding the use of that common carrier—the roller towel.

In all schools and reformatories applicants should be examined by a competent medical examiner before admission, and any applicant declined who has any form of communicable eye disease unless especial quarters are provided for the isolation of such cases.

The buildings of all such institutions should be periodically inspected by experts in sanitary science, and a detailed report

made to the State or local health boards setting forth the sanitary conditions of the buildings, closets and lavatories. The capacity of the institution should be regulated by ordinance, fixing the number of persons to be admitted, allowing an ample air space for each person, and providing for the entrance of fresh air and abundant sunlight.

There is no source of danger promoting contagion more surely and rapidly than the massing together of humanity in the vitiated air of closely-packed apartments with insufficient accommodations for proper ablutions, and with subtle poison arising from unsanitary sinks, lavatories and closets. The conditions referred to, by insidiously undermining the constitutions of the inmates, render them not only more susceptible to the contagion of communicable eye diseases, but make them fertile fields for the germination of the bacterial products of any form of contagion.

There should be apartments especially light and airy, set apart for the isolation of any case of communicable eye disease which may originate within buildings, or may, for any reason, be admitted. The patients must be so domiciled that they will not become vehicles of contagion to the remaining occupants of the institution, and constant quarantine maintained until the danger of contagion has passed.

Blindness as a result of accident in factories seems to be on the increase. Greater precautions in guarding dangerous machinery is recommended. The posting of notices in conspicuous places where danger exists should be compelled by ordinance.

In closing your committee would respectfully recommend that steps be taken at the next session of the Senate and Legislature of the State of New Jersey to have a bill for the prevention of blindness introduced as indorsed by and its passage requested for the Medical Society of New Jersey.

Respectfully submitted,

WALTER W. JOHNSON.
PHILANDER A. HARRIS.

The following resolution was unanimously adopted at the

One Hundred and Twenty eighth annual meeting of the Medical Society of New Jersey:

Resolved: That the Committee on Legislation for the "Prevention of Blindness" be continued, and requested to have a bill drawn and introduced at the next session of the Senate and General Assembly of the State of New Jersey, regulating the care of infants suffering from communicable eye disease, and that the bill be introduced as indorsed by and its passage requested for the Medical Society of the State of New Jersey.

The Art of the Surgeon.—The art of the surgeon may for purposes of comparison, be viewed from two aspects. One is allied to the art of workers in wood and iron, and may be called mechanical. The other aspect has little of the mechanical about it, and is closely allied to a fine art. The mechanical side, the art of the application of tools, is an important but comparatively simple one, and need not detain us. Easily learnt as it is, it is still worthy of being taught. It is not, perhaps, a good thing that a surgeon should for the first time handle a saw or chisel, or a drill, or a trephine on a living human bone: and it would be well if we, who have much to do with apparatus, knew the qualities of the metals and other materials we employ, and the ways of jointing, and welding, and moulding them to meet the ends we desire. It would, in fact, be good for most surgeons to spend a month or two in a mechanic's shop under the severe discipline of a skilled British workman. With most of us it certainly would not be labour wasted. But I would not make tuition in the joiner's art compulsory because we use joiner's tools. In respect of mechanical skill in their handling, I would place the surgeon's tools on the level of the sculptor's spatula or chisel, or only a little higher. The chisel of the sculptor and the knife of the surgeon are mere accessories in the work to be compassed by the brain-compelled hands. Still, as accessories they have their importance; we ought to be familiar with our tools. But the surgeon, I repeat, is more than a mechanic; he has work to do which brings him to the level of the true artist,

The other side of our craft I would venture to compare with that which produces what are known as works of art ; and this side is by far the more important. Here the work of the fingers is of small moment as compared with the work of the brain. The brain is supreme, and yet in delicacy, deftness, and general preciseness of obedience to the brain's behests, the fingers and hands have great calls made on them. In painting, sculpture, or music, mere manual dexterity rarely is deficient to him who has the artistic soul ; or, if there is deficiency, practice and education will do much to remove it. So in surgery the hands rarely fail to rise to the demand the brain makes upon them if they are trained. Let us look a little more closely into the surgical fine art, for it is nothing less than a fine art.

The highest part of the surgical art is more than handicraft ; it is braincraft uttered through the fingers. It is not mere manual dexterity or cunning. In fact, mere manual cunning, being a result of routine practice which begets reflex movements, is detrimental to surgical art, which demands the widest possible scope and variety of action. I should not quote the marvellous manual dexterity of the button-maker as the highest education of the hand, any more than I should quote the clever work of the oak-grainer as the highest art in painting. The surgeon's art demands breadth and variety in manual training ; the hands must have all-round capacity. The finger surgeon begins at the wrong end ; he ought to have been a button-maker. No training, however, comes amiss to the surgeon's fingers. By many devices and practisings he may and ought to improve their capacity ; but their final and most perfect training is in the actual work.

The skill of the hand depends greatly on the sense of touch and on what has been called the muscular sense. We are endowed with a sense of touch more delicate, perhaps, than is found in any other animal—the only sense in which we excel. The highest cultivation of the sense is essential to the surgeon.

Now the sense of touch is trained through the intellect as much as through the fingers ; it is helped by comparative appeals to the other senses, and especially to sight. The blind have been found to have no special excellence in actual sense of touch ; they excel in the intellectual interpretation of the sense impressions. We who can bring the sense of sight to help out the impressions of touch ought to surpass the blind in tactile power. Put it in this way. A blind man could scarcely map out in his trouser's pocket the figure of Britannia on the back of a penny. But, after seeing the figure, the possessor of a trained finger will recognize by touch many of the details such as the shield and the trident and the limbs ; and so he will identify the whole picture. The blind man cannot correct and verify his groping sense of touch by sight ; the seeing man can. So I say that a man who can see might, if he were determined, and were loyal to the sense he seeks to train, cultivate his sense of touch to a higher pitch of delicacy than the blind man.

Now there are no limits to the demands made on the surgeon's tactile powers. Touch is to the surgeon what hearing is to the physician in diagnosis, and more in treatment. The exquisite delicacy of differentiation possessed by the ear of the physician we desire to have for the finger pulps of the surgeon. In diagnosis touch tells us what sight cannot ; in operating in the dark depths of the body it goes where sight cannot, and sometimes it guides more truly than sight could. But always it is the intellect that interprets. It is as true to-day as it was twenty centuries ago that " 'Tis mind that sees and mind that hears ; all other things are deaf and blind."

Amongst the plastic arts sculpture perhaps gives us most points for comparison with the surgical. Each deals with the human body. The sculptor has to know the body externally in architecture, in bulk, and in outline ; the surgeon has to know it in the same ways, internally as well as externally, and in sections vertical, transverse and oblique as well. Each art demands from its votaries abso-

lute fidelty to form ; the ignorance that misplaces a tendon in a statue will lead to grief on an artery in an operation. There are similarities in their ways of working too. The inferior sculptor, by adding here and subtracting there, by measuring and squeezing and scraping, may, after long working, make a tolerable likeness, but never a work of the highest art. The true artist goes straight to the stopping point and then stops. What this stopping point shall be we cannot define, but it gives us that sense of true balance between detail and mass which signifies artistic proportion. So in surgery ; the surgeon-artist forms a clear conception of the work he has to do and makes straight for the ending of it. Between details and bulk he determinedly keeps a true artistic proportion. His time is limited, and into this time he must put his best work. He wastes no time over trifles ; he is very deliberate over difficulties. The most elaborate finish in both arts is visible where the technical difficulties are greatest. The clean straight strokes of a true artist are visible equally in the work of the surgeon and the sculptor.

The surgeon who is not an artist is devoid of a sense of true proportion. Where one bold cut is wanted, he will make a dainty nibbling dissection. He verifies his anatomy on the way to his work by the help of the director. He goes a little in this direction and retraces his steps ; then a little in that direction and returns. He has hobbies, and he rides one or two well. One man turns the peritoneum in, the other turns it out, a third is careful to ignore it. Perhaps he gives one suture to peritoneum, one to muscle, one to fascia, and one to skin, and each suture is perhaps of a different colour or a different material, so that nature may have no chance of making a mistake. His work is not towards one finished work of art, but to the making of half a dozen clever separate studies. Like the sculptor who is good at hair, and works out every one, or the painter who is good at eyes and puts in the dots in the iris, each sacrificing the whole to the part, our inartistic surgeon lingers over his fancies, and so fails to produce finished and

harmonious work. His details are not all equally balanced some are exquisite, some are mediocre, others are bad. The whole work, the whole operation, will not be the best possible for the saving of life ; it is not all round a finished work of art. Therefore it is to be condemned.

The surgeon's art has in it not only the elements of boldness, honesty, and simplicity pertaining to the sculptor's art ; it leads him in some of its departments into methods of working which may fairly compare with the most delicate amongst artistic pursuits. The finest work of the surgeon makes demands on the delicacy of the fingers little, if anything, less exacting than the demands made on the fingers of the etcher or the line engraver. The surgeon, as a painter, has to make pictures not only in life size, but in miniature ; as a sculptor he has to do not only the full figure and the medalion ; his work may also be compared to that of the graver of gems.

The operative art of surgery is truly a high art ; the demands it makes on the hand, the eye, and the brain of the artist are the same for surgery and the fine arts. Surgery and fine art may indeed well be practised by the same man. We see it in our own time. The art in etching of Sir Seymour Hayden, and the art in surgery of Sir Henry Thompson, each supreme in its way, have two sides only on the surface ; they are identical at bottom. And we have seen this in past times, sometimes to the loss of surgery, sometimes to its gain. The world lost a great surgeon in Leonardo da Vinci and gained a great painter ; it lost a great artist in Sir Charles Bell and gained a great surgeon.

Now of this art of surgery, where and what is the teaching ? Where and who are the masters who guide and correct the young artists in their work ? It may be said at once, of masters there are plenty, but they do not teach. There is no real teaching of the art of surgery in our country. Here and there a favoured few, house-surgeons and assistants, are permitted to pick up what knowledge they

can by looking on and by helping; but of personal guidance in the actual work on the living subject analogous to the guidance given in other arts, we in ours know nothing. We have to teach ourselves by experience alone. Think what this would mean in art training. It would mean that to paint a thousand portraits is the only way to become a first-rate portrait painter; to model a thousand figures is to become a perfect sculptor. It means in medicine that the midwife of 5,000 experiences is more to be trusted than the obstetric gold medalist of London University, who can boast of only 50. And note this further. The young sculptor may with impunity make and break figures to his heart's content; the young surgeon, in learning his art, is not supposed to damage or destroy human beings.

Artists, mechanics, craftsmen of all sorts learn their work in the workshops or studios with a master to correct their faults and guide their efforts. Surgeons alone have, unassisted, to grope their way to excellence in their art. In his science the student has guidance enough in all conscience, and in his note taking and his dressing he is sharply looked after. But he is severely left to his own devices to pick up the technics of his craft.

Is this right? That the art of surgery is teachable there can be no dispute, that it is worth teaching is still less disputable. Why, then, is it not taught?

The art can be taught in only one way, the way of teaching of the plastic arts. The young artist must, while beginning the practice of his art, have a master at his elbow, a master who will criticise his methods and correct them, who will guide him in the use of his hand, his eyes, and his instruments; who will in the fullest sense make him his pupil and personally lead him on, step by step, towards such excellence in the art as he himself has acquired.

In no way do I seek to detract from the value of such knowledge as is got in the class of operative surgery, so-called, or on the benches of the operating theatre. As a step between anatomy and surgery, the performance of operations on the dead body is of supreme value; it is indeed

indispensable. It is the first step towards operative surgery, but it is not operating. For instruction in the living art of surgery, attendance in the operating theatre is of little value. The student sees little, and that little with uninstructed eyes. The student of surgery is just as likely to learn his art simply by attendance in the operating theatre as is the student of the violin to become a true artist simply by going to concerts. In both cases to learn the art the student must work at it; to attain to the highest degree of excellence he must work under a master.

If then the art of surgery is to be perfectly taught, it must be taught to the young surgeon actually operating. And here is our first difficulty. We cannot teach the art to unqualified men; students are not permitted to operate. We must begin our teaching after the student is qualified. As things are at present this is not easy. Our pupil of yesterday is our colleague of to-day; when qualified he is supposed to be our equal and therefore above our criticism. It is difficult to imagine a skilled senior in the operating theatre calling attention to the faulty methods of his young colleagues; it is impossible to conceive him pushing him aside and showing him how to do it. And yet, if the living art is to be taught at all, this personal way is the only way. Why should the young surgeon more than any other young artist fear tuition in the operating theatre? Possibly the presence of young students, of whom he is probably a teacher, would be a chief objection. Then, if the humility of him who truly seeks after knowledge is not forthcoming, must the young students be excluded from operations at which open instruction is given to young surgeons. And it resolves itself into this, that the master has a few qualified pupils, and is present at the operations of these few. He guides them in their work: he points out faulty methods; he advises and, perhaps, sssists; and this he does in the presence of all his pupils.

As a matter of fact I doubt if the young surgeon would fear tuition in public, if such tuition were given honestly and courteously by a man whom he could look up to as a

master. There is no method of education in handiwork that can surpass fair criticism of the work before compeers. The mere pointing out of faults calls attention to details which the average onlooker would fail to see. But criticism is not all fault-finding ; it calls attention to excellence as well as defects. The pointing out and correcting of faults, and the praising and holding up for imitation of any special excellence in operating might well, to the advantage of all and the discomfort of a very few, form part of the routine education of the hospital operating theatre.

What would you or I or any surgeon amongst us not give to have a Liston or a Syme at our elbows to teach us ? Who that really has his soul in his art could fail to welcome an opportunity for such tuition ? And why should we not have it ? There is no lack of capable teachers, and surely they could easily be induced to teach. I can conceive no finer ending to a great surgeon's career than to devote it to the education in his art of the men who are to succeed him. He has handed over his legacy of science to all mankind ; he has laid aside his own knife, but his art will survive him, for, in the band of pupils whom he has trained in their work, his legacy of art will be as enduring as his legacy of science.

Am I suggesting a return to something like the old apprenticeship ? Well, what then ? The art of surgery is no new thing. Probably as an art, pure and simple, it was more perfect in the apprenticeship days of fifty years ago than it is to-day. For then, before the days of anæsthesia, the highest art was not only a saving of life, but a merciful saving of suffering. If we have lost this stimulus to perfecting ourselves in the art that pain to the patient gives, we have still the saving of life to urge us on, and that is an even greater stimulus. How a surgical artist like Robert Liston, the greatest probably the world has ever seen, trained as he was in the cruel and exacting school of pre-anæsthetic days, would have revelled in all our "otomies," "ectomies," and "ostomies" of to-day ! To imagine Liston, trained in practice as he was, living

amongst us now, and having before him the science we possess, is to realize my ideal of the surgeon-artist.

If we did have the old apprenticeship back amongst us it would be for surgery a something. It would be at least better than the nothing we have now. But I am not asking for the old apprenticeship; I am pleading for something higher. We speak of apprenticeship rather as to a trade; I am pleading for pupilage as if to a fine art. I am simply asking for the surgical high art what is freely and abundantly given to all other parts; personal teaching in actual work by competent masters.

I make no complaints, and I offer no accusations. British surgery needs no apology. I simply seek to give it one more push upwards. We have reached a high degree of excellence, but we may reach a higher, and one way to this is through personal tuition in the art. We start as physicians; we are educated in the technical arts of the physician at the bedside and under masters. We are likewise obstetricians; here, also, we have personal instruction in the actual doing of our work. But in surgery, nowadays, and in operative surgery alone amongst all arts and crafts, we have no genuine personal instruction. If, on this foundation, British surgery has reached the height it has, to what eminence might it not rise if we were careful that every young surgeon were trained in the highly technical and highly important practical art of operative surgery?

Detailed suggestions as to how this training might be carried out would be out of place on an occasion such as the present. This matters little; for, if you think as I do, the result will surely follow. But we must fight for our own right hands. We must expect no help from the State. The State, like Providence, helps those that help themselves. When we have shown that we need practical teaching in our art; when we have proved that we can provide it; when in fulfilment of those powers with which we have been legally endowed we have created in our teaching centres some working process of practical instruction, then

we might ask for more. We might ask to be put on the level of the fine arts and seek for a Royal Academy of Surgery, as we have royal academies of painting, sculpture and music. To such an academy a school with teachers would be attached. The school would be a surgical hospital endowed with every known excellence of hygiene, and nursing and appliance; the teachers would be those who are supreme in art; the pupils men already qualified who seek for practice in the higher walks of surgery. Do you believe me that this would be good for surgery? Then let us work for it.

And now I have finished. I have spoken of our art solely from the practical point of view, as to how it may be improved in *technique;* that is, as to how it may confer most benefits to others. I have not referred to any ennobling of ourselves. Indeed, I have little belief in it. All arts tend to elevate; this, the ultimate criterion of true art everywhere, has no more truth for the surgical than of the painter's or any other art. In the highest flights of the imaginative faculties, the faculties that make poets and inventors and musicians, we do not stand very high. Yet a previous generation can point to a surgeon who practically founded a new science; this generation can point to a surgeon whose purely surgical discoveries have created new laws for the preservation of health and the cure of disease. These are high aims, but they are not the highest. Our dealing is with the body; the painter, the poet, and the sculpture deal with the soul; their goal is higher than ours.

It has its punishments, too, for surgery is a terrible taskmaster. The punishment is not a mere heart-burning over the rejection of a picture by an academy; it is a heart breaking over the losing of a life by our own work. Our worst punishments are self-inflicted; for every failure, even if incurred in the leading of a forlorn hope, means a personal criticism of a cruelty and thoroughness which no outer criticism can match; a criticism that condemns without chance of condonement, for our own conscience is

judge. These things I hint at, but do not dwell upon. They are there, however, and their presence makes us better surgeons, and I trust better men.

More than 500 years ago Guy de Chauliac, the greatest of the surgeons of the Arabic period, wrote these words: "Knowledge is created by additions; the same man cannot lay the foundation and perfect the superstructure. We are as children carried on the neck of a giant; aided by the labors of our predecessors we see all that they have seen and something beyond." These words might have aeen my text. The burden of my theme has been to hold fast and care well for the old truths; in our love for the new science not to forget the old art. For in autumn the leaves fade and fall first from the youngest branches; they linger longest green on the old wood. Let us graft our new truths on the old stock; so will they live longest and flourish most.—*J. Greig Smith, M. D., in British Medical Journal, August 4, 1894.*

THE

Montreal Medical Journal.

VOL. XXIII. AUGUST, 1894. No. 2.

THE PREVENTION OF BLINDNESS.

In another part of this JOURNAL we print the "Report of the Committee on Prevention of blindness through Legislative enactment." This subject has been exciting a good deal of attention among medical men, and in several of the States laws have been enacted for the protection of infants against the ignorance and folly of midwives and parents. When it is known that the terrible disease, ophthalmia neonatorum, is a preventable one, and even when it is contracted is, in the majority of cases, curable, it is apparent to all that neglect of treatment is most culpable and should be made a criminal offence and punished as such. The report states that fully twenty per cent. of all blindness in early life is caused by this disease, and as it occurs principally among the poor, it adds greatly to the misery and hopelessness of their condition as they have little or no chance of any teaching, and their only way of making a living is by begging or more questionable methods.

It is a serious economic question, as well as a medical one, and should not be longer neglected. While our Boards of Health are doing such good work all along the line of contagious and preventable diseases, let them add this to their list and *insist* on notification of all cases so that they can be investigated and adequately treated. At the same time steps should be taken for the diffusion of knowledge

among midwives and nurses regarding this disease, and the necessity of immediate treatment.

This subject is not new, but it is one which is continually thrust upon our notice and, in spite of all that has been said and written about it, a good deal of ignorance still prevails.

THE PROVINCIAL BOARD OF HEALTH.

In the current number we publish some of the statistics regarding death rates, &c., in this Province. They are collected by the Provincial Board of Health from over eight hundred different municipalities. This will give an idea of their work in this direction.

The death rate for twelve months, deduced from statistics collected for only half that time, is probably a little too high, especially for the cities, because in that time the hot summer months are included, when the mortality is particularly high. This is the first period for which statistics have been collected, the law having only come into effect on July 1st, 1893, and in future the year will run from January 1st to December 31st.

The Board is at present constituted of the following members :

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J. A. Beaudry, M.D., Inspector, Montreal.
Wyatt Johnston, M.D., Bacteriologist, Montreal.
R. F. Ruttan, M.D., Chemist, Montreal.
L. J. H. Roy, M.D., Statistician, Montreal.

The head office, with the laboratories, is at 76 St. Gabriel street, in the old Government building, formerly occupied by the Geological Survey.

We propose to publish these and other statistics and reports from time to time, and we trust that they will prove of interest as showing the state of the health of the province, the relative healthfulness of various localities, and the measures taken to promote and guard the health of the population.

The Board of Health for the Province of Quebec have, during the past month, established a Bacteriological Laboratory in connection with their office, at 76 St. Gabriel street. This laboratory, which is in charge of Dr. Wyatt Johnston, is well equipped with the best modern apparatus for sanitary investigations. A Chemical Laboratory for the sanitary analyses of water and food supplies, drugs, etc., is also being fitted out, and will be in charge of Prof. R. F. Ruttan, who, in the meantime, is carrying on the work in his laboratory at McGill College. Besides making such analyses and researches as may be required by the Provincial Board, it is proposed to make arrangements by which local health boards and municipalities can have analyses made at a very moderate cost. We congratulate the Board upon providing what has long been a great want in connection with public medicine in the province.

Dr. J. E. Laberge has been appointed City Bacteriologist in connection with the Montreal Health office. Dr. Laberge has received his training in the Pasteur Institute of Paris, and his appointment is considered an excellent one in every way. There is a great opportunity for making a record in connection with civic health matters which has long needed the attentions of a bacteriologist.

Distribution by Counties of some of the causes of death. An abstract from the statistics for the last six months of the year 1893.

Name of Counties.	Tuberculosis.	Diphtheria	Scarlatina.	Typhoid.	Measles.	Whooping Cough.	Grippe.	Diarrhœa.	Cancer.	Still Born.	Prematurе Birth.	Accident.	Old Age.	Cause not given.	Other Diseases.	Total deaths.
Argenteuil	6	2	4	.....	.....	1	3	9	4	1	.....	2	3	3	21	59
Arthabaska	14	10	7	1	16	.....	10	50	2	5	7	2	7	13	87	231
Bagot	16	5	1	3	1	2	1	54	4	6	2	3	.....	5	79	182
Beauce	28	78	2	11	2	2	16	87	3	20	2	5	3	19	145	423
Beauharnois	8	1	.....	3	.....	.....	.....	46	3	7	.....	3	4	4	63	142
Bellechasse	6	10	5	2	1	.....	8	46	.....	13	.....	1	3	4	73	172
Berthier	15	14	.....	1	5	10	2	68	3	6	1	4	4	2	90	225
Bonaventure	8	3	.....	.....	.....	20	4	25	3	4	1	3	2	14	37	124
Brome	11	2	1	5	.....	1	1	12	2	2	.....	3	3	1	40	84
Chambly	4	6	3	2	1	.....	2	32	1	2	2	2	1	4	48	110
Champlain	13	2	6	7	3	2	2	66	4	10	.....	3	8	11	120	257
Charlevoix	11	5	.....	1	.....	.....	7	15	2	6	.....	2	1	20	53	123
Chateauguay	4	3	.....	2	.....	1	3	18	3	4	2	3	4	4	35	86
Chicoutimi and Lake St. John	16	46	.....	4	.....	1	6	42	2	11	.....	5	5	9	60	207
Compton	13	3	1	3	.....	.....	2	15	.....	6	1	5	2	10	46	107
Two Mountains	10	6	24	5	.....	2	.....	25	.....	5	1	1	1	10	45	135
Dorchester	12	50	1	5	1	1	7	21	1	11	1	.....	5	13	57	186
Drummond	23	2	2	1	2	4	1	29	.....	6	1	2	5	9	49	136
Gaspé	13	7	.....	.....	1	34	1	5	2	8	3	1	5	19	42	141
Hochelaga	73	39	31	17	12	.....	11	217	11	32	21	8	.....	11	390	873
Huntingdon	17	1	5	1	.....	.....	1	8	2	4	2	3	1	7	35	87

Distribution by Counties of some of the causes of death. An abstract from the statistics for the last six months of the year 1893.

Name of County.	Tuberculosis.	Diphtheria.	Scarlatina.	Typhoid.	Measles.	Whooping Cough.	Grippe.	Diarrhœa.	Cancer.	Still Born.	Premature Birth.	Accident.	Old Age.	Cause not given.	Other Diseases.	Total Deaths.
Iberville	8	.....	1	2	.....	1	2	16	1	5	.....	.....	1	3	42	82
Jacques-Cartier	19	7	3	3	.....	.....	1	40	0	8	.....	8	5	.....	91	185
Joliette	23	3	2	5	16	5	1	62	6	19	.....	5	12	10	102	271
Kamouraska	12	19	3	3	1	21	3	52	3	11	.....	3	10	16	66	220
Laprairie	7	3	.....	2	5	.....	.....	21	3	6	.....	2	2	3	58	113
L'Assomption	9	8	9	1	....	1	.....	28	4	14	....	.....	5	10	76	165
Laval	8	5	.....	2	1	.....	.....	25	1	4	.....	2	3	3	48	163
Levis	26	30	4	3	7	1	3	82	5	16	.....	7	3	2	106	295
L'Islet	7	.....	.....	2	.....	1	.....	35	5	12	.....	1	3	3	58	127
Lotbinière	11	3	.....	2	.....	.....	.....	34	4	6	.....	6	7	8	88	169
Maskinongé	15	5	.....	3	4	4	1	55	3	6	.....	3	.....	3	56	158
Megantic	11	18	3	2	5	10	1	53	4	8	.....	2	8	18	52	195
Missisquoi	13	6	.....	4	.....	3	2	14	1	3	1	1	5	7	50	110
Montcalm	8	4	2	1	3	1	2	20	.....	11	3	1	3	4	59	122
Montmagny	11	.....	2	3	.....	.....	4	47	1	12	.....	4	12	20	80	193
Montmorency	17	.....	.....	3	.....	2	5	24	2	4	.....	3	7	36	60	163
Napierville	7	4	3	1	2	.....	6	18	3	1	.....	.....	3	2	33	83
Nicolet	35	18	3	7	7	18	16	54	5	18	.....	3	11	47	98	340
Ottawa	24	17	23	2	2	3	3	57	4	18	2	12	7	55	162	391
Pontiac	13	1	2	5	.....	2	.....	9	3	3	.....	3	5	3	22	71
Portneuf	28	6	.....	3	.....	1	6	51	3	12	....	3	9	14	448	284
Quebec (C unty)	25	1	.....	7	.....	1	2	68	5	9	.....	3	8	26	138	294

Richelieu	10	8	1	4	2	15	3	53	4	8	.....	3	5	5	92	215
Richmond	11	4	2	.....	1	1	3	17	3	5	.....	1	2	6	38	94
Rimouski	21	27	.....	2	.....	1	13	53	2	16	3	4	6	32	86	266
Rouville	3	1	3	2	.....	.....	1	39	2	8	.....	1	8	3	56	127
Saguenay	8	1	.....	.....	.....	.....	1	4	1	.....	.....	2	.....	5	14	36
Shefford	12	2	3	.....	.....	4	2	32	2	7	.....	1	15	33	55	168
Sherbrooke	8	5	5	5	.....	1	.....	29	4	4	.....	.....	1	3	71	136
Soulanges	6	.....	.....	1	.....	1	.....	25	2	4	.....	3	2	2	50	96
Stanstead	13	3	3	1	1	4	.....	17	9	2	.....	4	4	3	51	115
St. Hyacinthe	27	3	1	7	6	3	1	51	2	12	.....	5	10	6	118	252
St. John	10	1	1	1	.....	1	2	23	2	3	.....	1	3	4	41	93
St. Maurice	11	1	1	3	1	.....	8	25	2	5	.....	2	3	10	43	115
Temiscouata	15	26	.....	4	.....	1	7	54	3	10	.....	5	6	30	88	249
Terrebonne	10	11	2	8	.....	1	1	53	4	25	.....	3	9	30	101	258
Vaudreuil	14	5	.....	2	1	.....	2	19	2	4	.....	2	3	3	42	99
Vercheres	5	3	.....	4	4	.....	2	38	2	4	1	.....	7	1	56	127
Wolfe	3	4	.....	2	3	2	4	16	.....	14	.....	1	2	8	39	98
Yamaska	25	12	.....	10	1	25	6	60	1	11	2	8	10	8	67	246
Three Rivers	17	.....	.....	1	.....	.....	1	35	5	9	.....	2	3	1	41	115
Quebec City	67	18	1	16	2	.....	6	234	16	27	32	6	25	5	412	867
Montreal	343	71	140	24	7	6	25	888	71	53	213	51	75	163	1773	3853
Total	1297	960	316	237	125	222	234	3471	257	606	304	240	395	846	6642	15852

Death rate for each Province for the last six months of the year 1893 :

Counties.	Number of Deaths.	Population.	Death rate per 1,000 for 6 months.	Death rate per 1,000 for 12 months.
Argenteuil	59	15,210	3.87	7.74
Arthabaska	See Drummond and Arthabaska.			
Bagot	182	21,820	8.34	16.68
Beauce	423	39,450	10.72	21.44
Beauharnois	142	16,830	8.43	16.86
Bellechasse	172	18,740	9.17	18.34
Berthier	225	19,350	11.62	23.24
Bonaventure	124	21,320	5.81	11.62
Brome	84	14,440	5.11	10.22
Chambly	110	11,910	9.23	18.46
Champlain	257	27,280	9.42	18.84
Charlevoix	123	16,700	7.36	14.72
Chateauguay	86	13,735	6.26	12.52
Chicoutimi, Lake St. John	207	30,100	6.87	13.74
Compton	107	23,600	4.53	9.06
Dorchester	186	18,278	10.17	20.34
Drummond and Arthabaska	367	45,650	8.04	16.08
Gaspé	141	27,350	5.11	10.22
Hochelaga	873	96,000	9.09	18.18
Huntingdon	87	14,129	6.16	1t.32
Iberville	82	11,325	7.24	14.48
Jacques Cartier	185	14,220	13.00	26.00
Jolliette	271	23,160	11.70	23.40
Kamouraska	223	20,080	11.10	22.20
Laprairie	110	10,769	10.21	20.42
L'Assomption	165	73,300	12.40	24.80
Laval	103	9,430	10.92	21.84
Levis	295	25,520	11.12	22.24
L'Islet	127	13,560	9.36	18.72
Lotbiniere	169	20,645	8.18	16.36
Maskinonge	158	17,914	8.82	17.64
Megantic	195	23,100	8.44	16.88
Missisquoi	110	18,740	5.87	11.74
Montcalm	122	11,930	10.22	20.44
Montmagny	196	14,330	13.67	27.34
Montmorency	163	12.306	13.24	26.48
Napierville	83	10,000	8.30	16.60
Nicolet	340	29,275	11.61	23.22
Ottawa	391	66,800	5.85	11.70
Pontiac	71	22,650	3.14	6.26
Portneuf	284	25,017	11.35	22.70
Quebec County	294	19,310	15.22	30.44
Richelieu	215	21,560	9.97	19.94
Richmond and Wolfe	192	32,650	5.88	11.76
Rimouski and Matane	266	33,340	7.97	15.94
Rouville	127	15,400	8.24	16.48
Saguenay	30	9,730	3.69	7.38
Shefford	168	23,270	7.21	14.42
Sherbrooke	136	17,150	7.92	12.84
Soulanges	96	9,460	10.14	20.28
Stanstead	115	18,725	6.14	12.28
St. Hyacinthe	252	21,635	11.64	23.28
St. John	93	12,286	7.56	15.12

Death rate for each Province during the last six months of the year 1893.—*Continued.*

Counties.	Number of Deaths.	Population.	Death rate per 1,000 for 6 months.	Death rate per 1,000 for 12 months.
St. Maurice	115	12,090	9.51	19.02
Two Mountains	135	14,815	9.11	18.22
Temiscouata	249	25,750	9.67	19.34
Terrebonne	258	23,170	11.13	22.26
Vaudreuil	99	10,620	9.32	18.64
Vercheres	127	12,209	10.40	20.80
Wolfe	See Richmond and Wolfe.			
Yamaska	246	15,800	15.56	31.12
Three Rivers City	115	8,720	13.18	26.36
Quebec City	867	63,259	13.70	27.40
Montreal City	3,853	235,475	16.36	32.72
Total	15,852	1,562,180	10.14	28.28

Death rate of cities of over 5,000 inhabitants during the last six months of the year 1893 :

Cities.	Number of Deaths.	Population.	Death rate per 1,000 for 6 months.	Death rate per 1,000 for 12 months.
Montreal	3,853	235,475	16.36	32.72
Quebec	867	63,250	13.70	27.40
St. Henri of Montreal	265	16,000	16.56	33.12
Hull	149	12,700	11.73	23.46
Sherbrooke	105	10,900	9.63	19.16
Ste. Cunegonde	146	10,900	13.39	26.78
Three Rivers	115	8,720	13.18	36.36
St. Hyacinthe	116	7,500	15.46	30.92
Levis	74	7,228	10.23	20.46
Sorel	87	6,900	12.60	25.20
Valleyfield	67	6,000	11.16	22.32
Total	5,844	385,573	15.15	30.30

Medical Items.

—The mother-in-law of the Mikado of Japan was recently ill. She had 423 physicians in attendance, and yet she recovered. A Buddhist priest located the cause of her illness in the introduction of railways.

THE CHEMISTRY OF ETHICS.—The leading authorities upon the subject of criminal anthropology appear to be convinced that the ultimate causes of the criminal diathesis are abnormal chemical substances found in the system. We might suggest that these substances, if they exist, should be classified as *tocsins* of the soul.

—M. Delisle, librarian to the National Library of Paris, says that the paper upon which most modern books are printed will soon begin to decay. Books printed upon paper made from wood pulp are especially liable to rot early. Even many so-called hand made papers are not more durable, as they are so treated with chemicals as to easily decay. Old fashioned paper made with rags has stood the test of hundreds of years.

THE MONTREAL MEDICAL JOURNAL,

A MONTHLY JOURNAL OF MEDICINE AND SURGERY.

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THE MONTREAL MEDICAL JOURNAL CO.,
Care of GAZETTE PRINTING CO.,
MONTREAL

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXIII. SEPTEMBER, 1894. No. 3.

Original Communications.

PRESIDENT'S ADDRESS.*

BY T. T. S. HARRISON, M.D., SELKIRK, ONT.

My first duty, as well my pleasure, is to thank you for the honour you have done me in placing me in this position, an honour as unexpected as it was unsought. In fact, I might well have great misgivings as to my ability to fill it, for I need not tell you the mantle of my many able predecessors has not fallen on my shoulders, and I should not have accepted it had I not felt that I could rely upon your assistance and indulgence.

The subject of my address has been one of grave consideration. I might have taken the history of medicine or surgery, but it is trite, and has been worn threadbare. The history of the developments and improvements during the last one, two or three decades in this age of books and journals, is the property of the whole profession, especially of those who take enough interest in its progress to attend this meeting. It was with a good deal of diffidence that I took as my theme my personal experience and observations in medicine, extending over upwards of half a century.

Over fifty-seven years ago, with my father, the late Dr. Harrison, I settled near the shore of Lake Erie. The country at that time was an unbroken forest, with merely a thin and scat-

* Read before the meeting of the Canadian Medical Association at St. John, N.B., August, 1894.

tering fringe of settlements on or near the lake. The soil was heavy clay, and the surface very gently undulating. The water supply mainly derived from the rainfall. The watercourses were more or less obstructed by the debris of the forest, so that the swamps held their moisture all summer, or until dried by slow evaporation or percolation. At this time miasmatic diseases were so prevalent that very few passed a summer without an attack of ague, and bilious remittent fever was common, and sometimes fatal, especially among the unacclimated. It was no uncommon thing to find, during the hot weather of summer, cases of ague or remittent in every house in a settlement, and frequently every member of a family would be attacked at once. Unacclimated persons who were healthy and vigorous sometimes passed the first summer without being attacked, but the fact that they developed it early the next year showed that the poison, though dormant, was still present, and had preserved its virulence through the long period of winter, ready to show itself on the first occasion of the lowering of the powers of life. When the system became saturated with the miasmatic poison the patient was generally attacked every summer, as soon as the weather became warm, and it stuck to him either continuously or with intervals of apparent convalescence until the approach of cold weather. This would go on for perhaps from three to five years, when the susceptibility to the disease seemed to be worn out, but it left the patient with a constitution so shattered that it took years to recuperate, and left him an easy prey to the first serious attack of disease.

The miasmatic poison was so omnipresent that it complicated almost every other disease. I remember my father saying that he had scarcely seen an uncomplicated case of pneumonia, and the man who ignored its presence had little success in treatment. Quinia would check as it certainly, and I think in much smaller quantities than we now require. From ten to twelve grains in two grain doses rarely if ever failed to stop the ague for at least seven to fourteen days.

At the same time there was a peculiar and very fatal disease among cattle. It had the local name of murrain. The animal

was seen to be ailing ; the eyes became sunken, the extremities cold. In a short time a bloody diarrhœa and hæmaturia ensued, and the animal died in from twelve to twenty-four hours. A case of recovery was almost unknown. This disease was so prevalent that scarcely a herd escaped, and a farmer frequently lost from one-fourth to one-half his stock of horned cattle. Horses and sheep were not affected. In the next township to the west of us the soil was porous sand, well watered with springs and spring streams, and here, though ague was not uncommon, this disease of cattle was unknown.

Contrary to an opinion frequently advanced, the presence of malaria was not accompanied with the absence of typhoid, which, I think, was as prevalent as it is now.

When my father settled here, there was not a doctor nearer than a day's ride, and the medicine was entirely domestic. Charms and incantations were largely depended upon in cases of ague and hæmorrhage ; but in cases where remedies were used they were pushed with a vigour that would take the breath of the modern patient. Whiskey was the universal remedy, and had the advantage of being indicated in all diseases, in all their stages, and in all conditions of the patient. It was a *sine qua non* in midwifery. I remember when a boy riding with two old settlers through the woods, and while passing a loghouse, many miles from the nearest neighbour, a woman rushing out and hailing one of the men with " Have you any whiskey ? " He slowly and hesitatingly acknowledged that we had a bottle, " just enough to take us through the woods." " You will have to give it to us," says the old woman. " Here's a woman sick, and no whiskey. Did you ever hear of such a thing ? " My friend took a parting drink, and then, with a " longing, lingering look " at the departing spirit, handed the remainder to the midwife.

A disciple of Thompson had carried his peculiar ideas into the settlement, and the beautiful simplicity of the doctrine " Heat is life, and cold is death," that you had only to throw off the " cold phlegm " with lobelia, and keep up the heat with red pepper, to cure your patient, had gained many followers ; and I know of at least two deaths caused by the lobelia.

Bleeding was resorted to on the slightest provocation, and there was scarcely a neighbourhood that did not boast of a man who could open a vein with a dexterity that would shame the majority of the graduates of to-day ; and the enormous bowls of the various infusions and decoctions that were poured down the patient would go far to convince the observer that, as in the case of New York's historian, they intended to drive out the enemy by inundating the seat of war. Some of their medicines were nauseous enough to have been derived from the pharmacopœia of the Dark Ages, the Chinese or the homœopathists. An infusion of the excrement of the sheep was commonly prescribed for the measles, and that of the cat—no bad substitute for assafœtida—was considered " the sovereign'st thing on earth for fits."

My father was the first in the neighbourhood to treat diseases *secundum artem ;* but in those days the principles of medicine as taught by Sydenham and Cullen had not become obsolete, and he never hesitated to use contra-stimulants or the lancet in inflammation, in what was called inflammatory fever, or sthenic cases of disease with hyperaction, where he considered that the patient's constitution would endure the treatment.

It was in this school that I learned the first rudiments of medicine, and in the first years of my practice I used the lancet with more or less freedom. And though the doctrine of John Hughes Bennett and his followers has largely affected my practice, I am by no means convinced that the disuse of the lancet has been an unmitigated blessing. As there were brave men before Agamenon, so there were skilful and *successful* physicians before we were thought of, or a bacterium discovered. It was certainly a dangerous mode of treatment for the mere routinist, who bled, blistered and salivated each patient, as a matter of course ; but was a powerful weapon for good in the hands of the careful, observing physician, who understood the course and effect of disease, and carefully and intelligently studied and watched those of his remedies. And while our modern treatment saves patients who would have died under the old regime, I am convinced that the vigorous treatment of

our fathers saved many who would have been allowed to die under the expectant treatment so fashionable a few years ago.

Diphtheria reached us before railways had opened up the country, and I repeatedly saw it on isolated farms, surrounded by woods, and where it could not possibly have been carried from without, and where the land had been so recently redeemed from the forest that it could not have been derived from some previous but forgotten case. This has seemed to me to prove that the origin of the Klebs Loeffler bacillus requires further investigation. We also had cases of cerebro-spinal meningitis ; and I was much interested in a paper read by Dr. (now Sir James) Grant at the first meeting which I attended of this association, in (I think) the year '69. It was on Cerebro-spinal Meningitis, or, as he termed it " Purpuric Fever," as it appeared in the Ottawa Valley. It had appeared with us at the same time ; and, changing the locality and the names, his paper would have fairly described my cases and their results.

The country became rapidly and thoroughly cleared and drained ; and it so completely rid us of the cause of miasmatic disease that I have scarcely seen a case of ague in twenty or twenty-five years, nor a case of old-fashioned remittent, in my own practice of some forty years, and it is so long since we have had a case of murrain among our cattle that it has ceassd to be a tradition. We have occasional cases of typhoid ; but, though for years there was no attempt to isolate the patient, it is very seldom we have had a second case in a neighborhood. We have a German settlement near us, where it is considered to be the duty of everyone within reach to visit the sick, which they do without the slightest precaution, yet I never saw it communicated. In the township adjoining, where the soil is very porous, the opposite obtains. There an isolated or single case is the exception. Time and time again I have seen a case of typhoid fever followed by one, two or three others, in the same house or in the immediate vicinity. The only difference between the localities is in the soil and the water. Their water is spring, and from either springs, wells or streams is bright, sparkling and good tasted ; while ours is far from being clear,

and is contaminated with clay, lime, magnesia and sulphur. But while our soil is heavy and impervious, theirs is as porous as a sponge ; and I feel sure, allows the poison from the patient and his dejecta to find its way into the wells. These facts seem to me to go far to show that, if we disinfect or take care of the dejecta from our patients, there is little danger of spreading the disease.

For a long time in my earlier years I had no medical friend within easy reach, so that I had frequently to operate without assistance ; and I have more than once amputated the leg or thigh with only the aid that a resolute neighbour could give, and I have been so used to perform all the operations required in obstetrics without medical assistance that I never think of asking for a consultation. But this state of affairs has its disadvantages. While it has a tendency to make a practitioner self-reliant and resourceful, and has bred in Canada a host of practical men perhaps second to none, it has a tendency to make a man opinionative and obstinate. In the language of Pasquier, he is apt " to think there is nothing left for him to learn ; he entertains oftentimes the most absolute confidence in himself, and the most profound disdain for all who do not share the ideas—the opinions he has already conceived unto himself." Or else he is apt to get into a rut, and to develop the mere routinist.

After my father's death, I particularly felt the necessity of meeting other medical men at least equal to myself, and with greater or more varied experience ; and, as soon as this Association came within reach of me, I attended and joined it. I think this was at its second or third meeting, and I have attended most of its meetings since. When the Ontario Medical Association was formed, I was one of the first to join, and have been an active member from that time, and I attribute any measure of success I may have achieved to these circumstances. I hold it to be the duty of every live medical man in Canada to support these Associations and to attend their meetings, and that the man who has an opportunity to attend, and does not, fails in his duty to his profession, to himself and to his patients. It is not

enough to belong to his local society, and it is not correct or fair to hold that the Provincial Association takes the place of, or is in any way the rival of the Canada Medical. The provincial societies should be its feeders, for, while the provincial associations are necessary to unite and promote the brotherhood of the profession in each province, it is the Canada Medical that is the common bond of the profession of the Dominion, that knows no provincial boundaries, and unites the medical men from the Atlantic to the Pacific. But here we find an anomaly which, it seems to me, is a disgrace to the profession. Any medical man of good standing in his own province is eligible for membership of this Association and can attend its meetings anywhere ; but, if he wishes to practice, the moment he crosses the imaginary line which bounds his own province, he is met by a Shibboleth both vexatious and humiliating.

A man who, for a quarter of a century or upwards, has practised with credit and success, is, on entering another province, required to pass the examination of a student ; the examiners perhaps men without a tithe of his experience or ability—men perhaps unborn when he entered the profession. Surely this state of affairs should not and need not exist. Its inconvenience and unfairness must be manifest to all, and it should be the duty of this Association to remove the anomaly. It has been several times brought to its notice. I remember hearing it discussed in, I think the year 1869, by the president, Doctor (now Sir Charles) Tupper, but so far we have done nothing. The different standards of matriculation and education, the varying width of the portals to the profession in the different provinces is, I think, the main obstacle. And one can easily see the unfairness of asking a province where the standard is high, the period of study required long, the examination rigid, and where the University degree gives a man no right to practice, to admit, on equal terms, men who have qualified in provinces where they are admitted on much easier terms, and where the University degree of M.D. is all that is required to obtain a license or to register. One can see that the result would be " a beggarly account of empty" benches in their

colleges, while their students would go in crowds to the universities in the provinces where they found a royal and easy road to practice.

The only way to accomplish this is to establish a common curriculum, a common standard, a common portal to the profession for all the provinces of the Dominion ; and when a man has once entered he should be entitled to register in any of them ; and as medical education, like the Roman Eagles, cannot be allowed to retrogarde, the requirements to practice should be based upon those of the province where these are the highest, and where the examinations are the most rigid. This can work no injustice. Our standards are none of them too high. A few days ago Mr. J. Greig Smith, in the address on Surgery before the British Medical Association, says : " Are we to lower the standard of surgery so that our brains may not be strained, or are we to strain our brains that surgery may be raised ?" And he answers, " Let surgery rise, if brains fall ; let the weak, the lazy or the impatient fall out, but do not let us lower our standard because some men cry it is too high. It cannot be too high." I think this sentiment will be endorsed by this association, and I think no man competent to give an opinion, will say that in any of the provinces we have too high a standard.

We can only assimilate our varying standards by a joint action of all the provinces, and as this Association is the only body which contains, or should contain, representatives from them all, I think we must depend upon the Canada Medical to achieve this result. It has been for a long time held in abeyance, but the growth of our country, the increase in population and importance of many provinces and territories, which were not in existence when this subject was first brought up and discussed, and above all, the enormous and continuing increase in the numbers of medical men render its consummation more necessary than ever ; and although I am an old man, and in the course of nature not likely to practise much longer, and although it would not affect me personally, still as a member of a profession that has descended to me in a direct line through

surgeons, some of whom existed more than a century before I was born, and which I have transmitted to my eldest son, I am deeply interested in this question, and if I can feel that I have done anything to help throw down these barriers, and unite the profession of the whole Dominion, I shall consider my time well spent, and that I have not for so many years been a member of this association in vain.

August 22nd, 1894.

THE PRESENT STATUS OF ASTHENOPIA.*

By F. BULLER, M.D.,

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The science of medicine and the art of surgery includes so wide a range of knowledge and experience, that no one man can never hope to grasp the whole subject, or to become an expert in more than a limited area of the sea of work in which he finds himself floundering so soon as the portals of our profession have opened for his admission. For this reason, specialism has become more and more of a necessity, and it is through specialism, tempered by a wider knowledge, that future progress must be made. It is, therefore, well that we can all meet together from time to time and compare notes, so to speak. It is helpful and encouraging to learn what is being done by workers in other parts of the same field. I myself, would feel that I had not done my duty if I did not occasionally have some contribution to offer my colleagues in medical conclave assembled. I know the subject I have chosen for to-day will interest some, perhaps more than a few of you, because asthenopia is of such frequent occurrence that every physician must, time and again, meet with it in some of its manifestations. The term asthenopia is, of course, generic, and includes quite a number of visual disturbances, all of which present the salient characteristic of inability to use the eyes in near work without discomfort. The asthenope is perpetually reminded that he possesses organs of vision, and many devote a considerable portion of their time to estimating the chances of avoiding what they conceive to be an impending blindness. These gloomy forebodings are often mightily strengthened by the comforting assurance of friends, and I may add, now and again

* Read before the Canadian Medical Association at St. John, N.B., on Aug. 23rd, 1894.

of medical advisers that the symptoms probably indicate some serious disease of the optic nerve. The symptoms complained of vary from slight pricking or burning sensations in the eyes themselves, to severe distress in or about the eyes, or to widely extended and sometimes violent perversions of sensations, such as frequent and intense headache, pains in the back of the neck, or spine, giddiness, nausea, and, in some instances, attacks of vomiting, when the use of the eyes is persisted in. There is in fact, so far as I am aware, no purely functional disease capable of causing a more genuine and persistent distress than is suffered in the severer forms of asthenopia. Taking this affection in its widest sense, I am under the impression that more than half the entire time and attention of ophthalmic surgeons is devoted to discovering the causes of asthenopia and finding means for the relief of this class of patients. If I may be permitted to express another general impression, it is to the effect that asthenopia is more prevalent on the North American continent than elsewhere ; I am aware, however, that general impressions are often wanting in scientific accuracy, and on closer study may prove to be erroneous. This impression is derived from two sources : First, from personal observation both in Europe and America ; and second, from the fact that the American literature of this subject during the last twenty years shows more minute attention has been given to this department of ophthalmic surgery in America than it has received in any other country. Twenty years ago, if one may judge by the text-books of ophthalmology of that period, only two forms of asthenopia were recognized by ophthalmologists. First, accommodative asthenopia as met with in hyperopia and astigmatism. Second, muscular asthenopia such as occurs when there is insufficiency of convergence notably in certain cases of hyperopia. A very brief discussion of these two forms seems to have satisfied the writers of ophthalmic treatises in those days, that they had done ample justice to the subject. I could name many European authors of much

later date who seem to have advanced no further in this direction. I do not think any one can practice ophthalmology very long without discovering that there are many persons who present no appreciable error of refraction and no fault in convergence, but are, nevertheless tormented by difficulty in using the eyes in near work, and by other functional disturbances associated with the act of vision, and there are others in whom, when an error of refraction has been ever so carefully corrected, there will be little or no relief from the asthenopic symptoms. These circumstances have necessarily led to a closer study of the subject with the result that we are now able to recognize quite a number of conditions, other than those already named, which give rise to asthenopic manifestations. The errors of refraction are, of course, the most frequent sources of asthenopia. Hyperopia chiefly on account of the demand that this condition makes on the mechanism of accommodation, astigmatism the same, with the additional disturbing element of an impossibility of perfectly correcting the defective retinal images which nature abhors not less than she does a vacuum. Myopia may give rise to asthenopia also, but not so often as to the former conditions. The asthenopia of myopia is due either to disassociation of the functions of accommodation and convergence, or to the increased difficulty of adequate convergence when the antero-posterior diameter of the eye-ball is considerably increased, as it always is in the higher grades of axial myopia. It is not my purpose to discuss the subject of errors of refraction and their correction; suffice to say that asthenopia associated with any considerable error of refraction, and sometimes even with comparatively trivial errors will generally disappear when the existing error is suitably corrected. If not, some fault in the equilibrium of the extra-ocula muscles will commonly be discovered when carefully sought for. In some instances the refracted error has of itself induced a false state of equilibrium or rather a defective equilibrium, a perverted muscular habit,

so to speak, which must be overcome before the optical correction can be worn with comfort, and perseverance in the use of the glasses selected for several days or weeks may be necessary before complete relief is obtained. There is, however, no reason why a pair of eyes presenting considerable error of refraction, or any error of refraction, small or great, should not also have some muscular fault quite independently of the refractive error. This circumstance has evidently been overlooked by those who claim that faults of equilibrium always disappear with correction of the associated refractive error. I have observed many cases in which the most exact correction worn for months and years has utterly failed in this respect. That there are muscular faults capable of inducing asthenopia in emetopric eyes is a matter of every day experience, and it goes without saying that such cases are beyond the scope of either spherical or cylindrical glasses. From this fact we are justified in assuming that muscular faults are only susceptible of relief by correction of refractive errors or defects in accommodation in so far as they happen to be directly dependent on optical defects or on some departure from the normal in the mechanism of accommodation.

It is somewhat remarkable that, although for nearly half a century, no one has seemed to doubt the existence of asthenopia from the defective power of convergence, or as is commonly and loosely stated, insufficiency of the internal recti, yet, it is only within the past few years that attention has been directed to faulty action on the part of the other five pairs of extra-ocular muscles, and this, notwithstanding the fact, so long and so well understood, that an impairment in the functions of any one of the twelve extra-ocular muscles necessarily unbalances all the others. Now, it has been found that insufficiency of divergence is a much more common defect than that of convergence, and, when present, no less capable of inducing visual disturbance than is the latter. Faults in the vertical movements of the eyes are also by no means infrequent and may occasion extreme

distress and a form of asthenopia, associated sometimes with widely extended reflex phenomena. Owing to the limited power of rotating the eye-balls possessed by the superior and inferior recti, comparatively trivial faults in these muscles are liable to create much disturbance. Just as in the case of refractive errors, there is no constant or direct relation between the degree of error and the inconvenience it may induce. So much depends on the stability of nerve power, occupation, state of health, and the general surrounding of the individual, that each one must be dealt with according to circumstances and quite independently of hard and fast rules. Sometimes all that may be necessary will be change of occupation, or such treatment as will invigorate or restore the general health. In other cases, the use of prismatic glasses, suitably adapted, will suffice ; but in a certain number of muscular faults permanent relief can only be obtained by surgical interference of a kind that will establish more or less completely an equilibrium of the ocular muscles. This may be extremely simple and easy of achievement, or it may be a most difficult and tedious undertaking. Under no circumstances should an operation on the extra ocular tendons be undertaken unless the indications for its performance are clear and definite, and even then the result will largely depend on the skill and judgment of the operator. There are a few cases of asthenopia which seem to originate in undue weakness of the ciliary muscle, cases in which, apart from hyperopia or the ordinary presbyopia, the near point of accommodation is removed beyond its proper limits, others in which near vision may be perfect for a short time, but cannot be maintained owing to weakness of ciliary muscle. In these the local use of eserine or pilocarpine will be of service, so also will general roborant treatment. Now and then among elderly people we meet with asthenopia, apparently caused by loss of transparency in the refractive media, such as incipient cataract. In these it is probable that imperfect retinal images create a reflex disturbance.

Reflex asthenopia of a different kind is by no means uncommon. We meet with it often in connection with nasal catarrh, and nasal deformities causing pressure of opposed mucous surfaces, surfaces which, under normal conditions, are never habitually in contact with each other. Two such conditions are to be especially noted. First, an hypertrophic or polypoid condition of the mucous membrane covering the anterior extremity of the middle turbinated. Second, a spine projecting from the septum and coming in contact with the inferior turbinated. Both of these conditions may require surgical interference for their relief.

Another cause of reflex asthenopia is found in the teeth. Carious teeth, with ulcerated roots, especially in the upper jaw, are to be looked for and set to rights or removed. Sometimes disease of the roots of the teeth will, for a time at least, elude discovery and make the diagnosis perplexing. So too, disease of the antrum, and perhaps of the other facial sinuses should be excluded in making a diagnosis. By far the most frequent, troublesome and persistent reflex asthenopia is met with in young or middle aged women who have for a considerable time suffered from uterine troubles, some of these recover from their asthenopia when cured of the uterine disorder. I have already alluded to this class of cases at some length in a paper read before this Association at a former meeting, and will therefore refer you to that paper for what I might say in this connection. There remains for consideration a considerable class of asthenopes, whom we cannot place in any of the groups of cases I have mentioned. Some of these are associated with that ill-defined condition known as neurasthenia, but why some neurasthenics, without discoverable ocular defect, should be able to use their eyes with comfort, and others only with difficulty amounting, perhaps, to total disability for near vision, is one of the problems we have yet to solve. There are, moreover, some persistent cases of asthenopia of unknown origin, which present none of the general symptoms supposed to be characteristic of neurasthenia. For these we

can only hope to find a more definite place for their classification after further careful study.

I do not think we are justified in assuming that there is such a condition as asthenopia of centric origin until we can define the centric lesions, upon which it is supposed to depend, or which are known to give rise to asthenopic symptoms. There may be cases traceable to known forms of dyspepsia, but I have never, to my knowledge, met with such, and I am not aware that dyspepsia is associated with asthenopia so often as to justify the assumed relation of cause and effect between them. It is likely that time will unravel the difficulties of diagnosis which surround the remaining obscure cases of asthenopia, but for my own part I prefer an attitude of agnosticism towards all that I cannot understand, rather than the easy way of concealing want of knowledge under the guise of unmeaning phraseology.

A YEAR'S EXPERIENCE IN APPENDICITIS.

By James Bell, M.D.,

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Appendicitis may safely be said to be the most important acute disease which the medical practitioner of to-day is called upon to treat. It is so because: (1.) It affects all communities, all classes and both sexes during the active period of life—from childhood to the period of declining vigour. (2.) If not treated surgically it is probably responsible, directly and indirectly, for a greater aggregate mortality than any other acute disease. It is certainly so if we except those which occur in epidemic and endemic form. (3.) If recógnized early and treated surgically the mortality should be almost nil. I am fully aware that in making these statements I am challenging criticism, and unfortunately they can neither be confirmed nor refuted by statistics, for the reason that we have no system of vital statistics in this country. But if statistics were at hand they could not be relied upon, for it is within the knowledge of every practitioner, of ten years standing or upwards, that most cases of appendicitis have been, until very recently, reported as "Peritonitis," "Inflammation of the bowels," "Pelvic cellulitis," "Obstruction of the bowels," etc. It is also now the experience of those who make post mortem examinations, that the vast majority of all cases of fatal acute peritonitis may be traced to appendicitis. In fact, if we except those cases due to traumatism, perforation of typhoid and gastric ulcers and some puerperal conditions, acute peritonitis is hardly ever due to any other cause.

I have been greatly puzzled in deciding as to the best form in which to present this subject to-day. It is obviously impossible to discuss the whole subject in the time which

* Read before the Canadian Medical Association, St. John, N.B., Aug. 22nd, 1864.

can be allotted to a single paper at this meeting, and besides the subject has been so thoroughly and exhaustively treated by Fowler, Morris, Richardson and many others during the past year, that I could have no excuse for making the attempt. I have, therefore, decided to base my observations upon the cases which I have myself treated during the past year To be exact, the period covered is eleven months —from the middle of September, 1893, to the middle of August, 1894, during which I have personally treated 48 cases of appendicitis. Of these 40 were operated upon and eight were not. All of these cases recovered except three (3). I have also been consulted by a considerable number of patients who suffered from periodical attacks, and whom I have seen in the intervals only, and I have seen a large number of cases in consultation with colleagues, but I have not included these cases in the above report as they did not fall into my hands for treatment.

Of the 40 cases operated upon, 5 may be called subacute, although in two of them there was perforation and abscess (well delimited by adhesions). In two others the appendix was greatly thickened and firmly bound down by adhesions. and in the fifth a very unusual condition existed.

In this case (32) John D., aged 44, had suffered for twenty-one years, with recurring attacks, three or four times every year. The first attack, which lasted several weeks, was looked upon as an attack of typhoid fever, with relapse. The subsequent attacks lasted on an average ten day's each. The last attack, for which he came into my hands for treatment, had lasted eight weeks, and early in this attack he noticed, for the first time, a hard, dense mass, as large as a small hen's egg, in the right iliac region. This was only slightly tender, but muscular movements gave him pain, so that he was unable to work. The following unique condition was found at operation. The mass, which was firmly adherent to the abdominal wall, was dissected off with a portion of the parietal peritoneum. The distal portion of the appendix, about an inch in length, was traced up to the mass, which could easily be made out to

contain a large concretion. The mass was opened and a stone as large as a walnut removed. The cavity was formed by adhesion of the free surfaces of the cæcum and ilium, and had obliterated the base of the appendix and communicated with both the colon and the ilium by large openings. The remains of the appendix were removed and the cavity closed by reuniting the peritoneal surfaces of the ileum and cæcum by Lembert-sutures. The patient made an uninterrupted and uneventful recovery.

Thirty-five were distinctly acute cases and of these there was perforation and abscess formation in 27. In four of these cases the appendix was found free in the abscess cavity, completely sloughed off; and in one no trace of the appendix could be found. In three cases the appendix was completely gangrenous, and in five cases the appendix was neither perforated nor gangrenous, but tense and distended with fluid, which, when the appendix was opened, was found to consist of a grumous blood-stained matter. The walls of the appendix were thickened. The mucous membrane, beyond a strictured condition, which existed in all these cases at or near the base, was ulcerated and ecchymotic. In two of these cases, at least, there was also lymphangitis, the lymphatic glands in the neighboring mesentery being swollen and hard. The cardinal symptoms —pain, tenderness, vomiting and disturbance of pulse and temperature were most marked in these cases.

There are, therefore, pathologically four distinct types represented in the above cases.

(*1st var.*) *The gangrenous appendix* usually containing a large fæcal concretion,—generally a first attack with severe onset and rapid progress—the so-called fulminant appendicitis, the symptoms being generally severe pain, marked local tenderness, with rigid abdominal muscles, vomiting from the outset and obstipation, pulse gradually increasing in rapidity, but with little or no elevation of temperature. Within a few hours or a couple of days the poisonous contents escape into the general peritoneal cavity by transudation through the necrotic tissues of the appendix

and without necessary perforation. If not relieved by operation before general poisoning of the peritoneum has occurred, coffee ground vomiting, mental hyperacuteness and increasing rapidity and weakness of pulse, indicate the hopelessness of the case, and death occurs usually within a day or two; or perhaps a little longer.

Cases 2, 4 and 5 of this series are of this kind. They were all operated upon early and all recovered.

Case 2. Lizzie P., 23, hospital servant, first attack, operated upon 18 hours after first symptoms. Appendix found lying superficially in abdomen; only slight adhesion of adjacent omentum. A large concretion (the size of a very large English cherry) was found near the base of the appendix beyond which it was completely gangrenous. It was removed through healthy tissue without fouling the peritoneum, and the patient made a rapid recovery. Two weeks after operation phlebitis occurred in the left leg, and three weeks later in the right leg. This was completely recovered from after some weeks in bed.

(*2nd var.*) *Cases generally recurrent,* in which ulceration within the appendix perforates its walls and escape of its contents takes place more or less rapidly into the peritoneal cavity,—the result being either a localized abscess collection or a general purulent peritonitis, depending upon the mode and form of perforation, and the resistance offered by nature in delimiting the invading poison—phagocytosis. This is the condition most frequently met with in the operating room and on the post-mortem table, and is generally only an advanced stage of the next variety. The symptoms and prognosis vary with the local conditions.

Cases 29, 26, 25, 6 and 40 of this series illustrate some of the various conditions produced in this form and may be taken as types.

Case 29. Jas. C., æt. 19, fourth attack; fourth day of illness. Appendix thin and long, curved acutely upon itself and perforated upon its concave surface. Localized abscess, in which was found a small concretion which had escaped through perforation. Uninterrupted recovery.

Case 26. Meredith H., æt. 30, third attack, fourth day of illness. Symptoms of perforation seven hours before operation. Appendix semi-gangrenous and perforated. Concretion found free in pelvis. No delimitation. Peritoneal cavity filled with pus which was removed by sponges (sterilized guage pads) and suction through a glass drainage tube carried down to the bottom of the pelvis. (The patient was so placed that the pus gravitated to the bottom of the pelvis and was removed by repeated suction with the syringe.) Persistence of distension and coffee ground vomiting (twice) during first twenty-four hours after operation, and then uninterrupted recovery.

Case 25. John G., æt. 50. Brawny indurated condition in right iliac region, extending down into Scarpa's space and over crest of ileum. Fourteenth week of illness and history of previous attacks. The diagnosis of sarcoma of ileum had been made, but it was clearly a case of pus burrowing in the abdominal wall. At the operation, the cæcum was found, and what was thought to be the remains of the appendix, in the pus cavity. Patient did well for a couple of weeks and the wound healed with the exception of a sinus in which a large drainage tube extended through from the loin. On the removal of the tube this also healed, but chills, perspirations and high runs of fever followed, which, with other symptoms, indicated, in my opinion, abscess in or about the liver. The patient would not submit to any further operative treatment, and left for his home in the State of New York two months after operation and nothing has been heard of him since.

Case 6. Geo. C., æt 44, third attack (within a year.) Three weeks illness. Great distension, obstipation and vomiting for past three or four days. Appendix semi-gangrenous with large perforation. A series of large abscesses filling loin and pelvis. Pus very fetid. Patient lived four days, during which vomiting ceased and the bowels moved, but fetor persisted in the discharges and a gangrenous condition developed along the track of the drainage tube.

Case 40. Peter C., æt. 33. Several (8-10) attacks of what was called "colitis" in past four years. Fifth day of illness, symptoms indicating perforation four days before operation, immediately after which vomiting, distension, obstipation and high fever developed. On the second day after perforation the vomiting was stercoraceous. These symptoms persisted with the exception that the vomiting was fæcal only during one day, and the temperature fell to the normal or below it. Appendix found attached to inner third of Poupart's ligament and perforated on its under surface, where the tissues were in a semi-gangrenous condition, with a medium sized concretion on the proximal side. A large, very foul smelling abscess was walled off by omentum to the right half of the pelvis. There was much lymph on intestines and engorgement of blood vessels. This patient is progressing rapidly toward recovery in spite of a most unfavourable prognosis. Cases 9 and 12 illustrate a condition in which the appendix sloughs off and a large abscess forms and the patient goes on for months without operation.

In point of duration they might be called chronic, but the symptoms are always active and danger always imminent.

(*3rd var.*.) A form of appendicitis in which the disease is for a long time confined within the organ, producing periodical attacks which are exceptionally severe but in which there is no peritonitis, or at most an inflammatory condition of the peritoneum covering the organ. Cases 3, 11, 27 and 28 illustrate this form. These cases often come to operation in this condition from the severity of the symptoms or sooner or later perforation occurs.

Case 22. W. G. C., æt 16. Third attack. Pain, tenderness and vomiting very severe. Temperature, 99½ ; pulse 100. Appendix long, tense and strictured near base, no adhesion externally and no concretion in appendix. Reddish, grumous fluid and ulcerated ecchymotic mucous membrane. Uneventful recovery.

Case 28. Albert M., 26 ; second attack ; sixth day of ill-

ness. This patient was sent to me for operation in December, 1893, having suffered from a very severe attack—his first attack. When I saw him, however, all his symptoms had subsided and he got rapidly well. His second attack began on the first of May, 1894, and he was operated upon six days later, when the attack was subsiding. The appendix might be described in the same words as the last, with this exception,—just near its base perforation had proceeded so far that the peritoneal coat alone remained and bulged out to the size of a cherry, with grumous purulent matter. There can be no doubt but that it must sooner or later have given way at this point, probably before long.

(4th var.) Cases in which the appendix becomes bound down, generally behind the cæcum in a dense mass of fibrous tissue. A very chronic sclerosing process seems to to occur, and these cases may remain for years in a quiescent condition and perforation then occur.

Case 7 illustrates this form. Mrs. A. P., aet. 32; second attack, two weeks duration. Some pain from mass felt in right iliac region tender on pressure. At operation the appendix was found very faintly bound down by adhesions which were old and firm and separated with difficulty. The appendix itself was not perforated, but its walls were greatly thickened.

There are three other cases, which for special reasons I think worthy of mention here. I have given details of one of the fatal cases—the first in order, chronologically. The second was Mrs. C., æt. about 30; first attack. This patient had been under treatment for some years for uterine trouble and had complained at times of a good deal of pain, and it is possible that previous attacks may have been overlooked. The last attack was only diagnosed on the operating table. She was seized with pain on a Saturday night after returning from a picnic. This persisted with moderate severity till Tuesday night, when she became collapsed after an exacerbation of the pain. Next day she rallied, but fæcal vomiting, abdominal distention and obstipation set in and persisted. I was sent for to operate for intestinal obstruc-

tion. I operated with the conviction that the case was hopeless, and she died about eight hours afterwards.

Case 34. Edith P., aet. 11. No clear history of previous attacks, but some reason to think that this was not the first attack. Seventh day of illness. Symptoms of perforation nearly four full days before operation. Abdominal distention, obstipation, vomiting; temperature 104° to 105°, pulse 160. Condition looked upon as very unfavourable. Appendix found perforated on distal side of concretion. Small concretion found free in abdominal cavity; no delimitation. Pus removed by gauze pads and syringe, as in case 26 (already quoted). Vomiting ceased; calomel, followed by salines produced free purging with relief of distention, and she lived for nine days. During all this time she was in a toxæmic condition, as shown by rapid pulse, sub-normal temperature, great restlessness and hyperacuteness of mind and special senses. The local changes, too, were unique. The discharges never lost their offensive odour, and it was the cultures from this case which gave off at a certain period of cultivation the identical fetid odor of the fluid removed from the abdomen at the operation. The most peculiar feature, however, was that the edges of the abdominal wound sloughed all around to the extent of a quarter to half an inch, including all the tissues, and leaving the cæcum exposed. This can only have been due to the local action of the pus, the parts being of necessity bathed in it during operation.

Case 35. Alexander A., aet. 6; first attack, third day of illness. This case is of interest only from the fact that it was a typical perforating appendicitis, due to an ordinary pin, the head of which had ulcerated through near the tip of the appendix, while the point had perforated the opposite side a little higher up and was imbedded in a mass of swollen omentum. This is the first case which I have seen of appendicitis due to a foreign body, unless in some cases a foreign body may have been the nucleus of the fæcal concretion.

Of the eight cases which were not operated upon there

is little to be said. Two were of that somewhat rare and ill-defined, but, I think, easily recognizable variety in which sudden onset, with the usual symptoms, pain, tenderness and vomiting, is speedily followed by a copious diarrhœa and relief of symptoms; tenderness only persisting for a day or two. These cases are probably cæcitis rather than appendicitis, or if the disease is in the appendix it discharges its inflammatory products into the bowel. One (Case 28) subsequently came to operation, and the other five, although typical cases of appendicitis, were so mild that operation was not considered necessary.

Complications.—In all these cases the only complications following operation were (1) phlebitis of the lower extremity in two cases (2 and 22), both beginning on the left side and, in one case only, extending subsequently to the right side; (2) empyema in case 5, also on the left side. The chest was opened and a drainage tube inserted in the usual way, and a perfect recovery resulted. The pus removed from the chest five weeks after the operation for appendicitis had the same odour as the pus from the abdominal cavity. No hernias have, of course, developed so far.

Technique.—But little need be said of the technique employed in the operation. The incision was made outside the sheath of the rectus muscle, in the line of the fibres of the external oblique, higher or lower, according to the apparent site of the appendix, and of sufficient length to enable the operator to complete the operation with the greatest ease. In about one third of the cases reported the appendix was removed beyond a silk ligature tied around the entire organ and the stump cauterized. In the balance a cuff of the serous coat was dissected back and sutured over the end of the inner tube previously ligated and cauterized. In these cases the ligature applied was generally fine catgut, but sometimes silk, and a series of Lembert sutures has also generally been applied to invert the stump of the appendix. I have also recently in a number of cases sutured the peritoneum separately, but I am going to discontinue this practice, as it seems to me to lead to pus in-

fection of the abdominal wound. A drainagè tube, generally glass, but sometimes rubber, has beeu used in nearly every case (for two to three days in the perforation cases), and followed by a tent of iodoform gauze for a couple of days subsequently. In two or three cases I used iodoform gauze packing at the time of the operation, but was not satisfied with the result.

In 16 of these cases only were bacteriological examinations made. The result was negative in 2. Pure colon bacilli were found in 11, and pus cocci as well as colon bacilli in 2. In case 34, in which characteristic fetor developed during the growth of the cultures, two forms of colon bacilli were found.

I have discontinued flushing of the abdomen in these cases. It is difficult, if not impossible, to remove through a small lateral incision all the water introduced without greatly prolonging the operation, and I cannot help thinking that the mere act of flushing often disseminates the poison instead of removing it. On the other hand, if the patient is so placed that free fluid will gravitate toward the pelvis the pus can all be evacuated with less disturbance of the viscera by means of sponges or suction through a large glass drainage tube.

It will naturally be expected that I should draw some conclusions from such a series of cases, especially as this series is but a culminating point, so to speak, and represents the sum total of the knowledge acquired in all my previous experiences. The lessons which I have learnt and which I desire to emphasize may be expressed in three words—diagnosis, palliation and operation.

Diagnosis is usually easy, and when the symptoms point that way the probabilities are all in favour of appendicitis. Nevertheless, I must acknowledge having erred twice during the past year. One case was an acute empyema of the gall bladder, with a stone impacted in the neck of the cystic duct, the other a case of twisting of the pedicle and strangulation of a small right-sided ovarian tumour. I had my doubts in both cases (which increased when I had the

patient anæsthetized) as to the diagnosis, but I was quite certain that if I was not dealing with appendicitis I was dealing with some acute condition which could only be relieved by operation.

As for the treatment of appendicitis, this disease should be condidered a surgical one from the very outset. There is no medical treatment for appendicitis. It is a local condition which cannot be reached by drugs and whose progress cannot be materially modified, much less stayed, by local applications. It is in every case a choice between an operation for radical cure, or palliative treatment, which means practically leaving the patient to his fate. Not that I would say that every case should be operated upon. The series of cases which forms the basis of these remarks shows that such has not been my practice. At the same time I am convinced that if I had operated upon every case I have seen in the last five years, as early as a diagnosis could reasonably have been made, I would have saved many lives.

Common sense teaches us that a patient with an inflamed part or organ should give that part or organ rest. We know that opium and hot applications relieve pain; a purgative at the outset of an attack may be useful, but here proper medical treatment ends—in palliation. Carried beyond this, so-called medical treatment may be, and I am sure often is, mischievous. Active purgation by repeated doses of calomel or salines can do no further good after evacuating the bowels, and by increasing peristalsis may precipitate perforation and disseminate the poison which has escaped through the opening thus produced.

I would say, therefore, in every case of considerable severity, remember the danger of perforation and operate. When perforation occurs you will have no choice, and in most recurrent cases perforation will occur sooner or later. When in doubt operate, and even in the later stages when it seems almost hopeless do not be deterred from operating. Remember that the virulence of the pus varies very much, and that some apparently hopeless cases may be saved. Cases 26 and 40 illustrate this fact..

Lastly, in expressing these opinions I would not have it understood that I have arrived at final conclusions, for I believe that there is still much to be learnt about appendicitis and its treatment.

THE FOLLOWING IS A TABULATED STATEMENT OF THE CASES OPERATED UPON :

No.	Name.	Age.	Number of attacks.	Duration of attack.	Condition of Appendix.	Result.
1	Percy M.....	25	Second	Two months...	Perforated ; localized abscess.....	Recovery.
2	Lizzie P.....	23	First.....	18 hours.. ...	Completely gangrenous.....	"
3	Jane D	23	First	2 days.....	Strictured, distended, lymphangitis.....	"
4	Mrs. H.....	24	Doubtful	2 days....	Gangrenous (completely)	"
5	Dan. P. McC,..	34	First	2 days.....	Perforated and gangrenous (completely)	"
6	Geo. C.	44	Third	Two weeks	Perforated ; large pus collection.	Died.
7	Mrs. P.....	32	First	4 weeks.....	Bound down in adhesions ; fibroid..	Recovery.
8	Jessie T.....	18	First	1 week.....	Perforated	"
9	Alex. D..... ...	31	First	6 months	Perforated ; sloughed off.....	"
10	Susie H	13	Second	2 days.....	Perforated ; abscess	"
11	John G	19	Second	2½ days..... ..	Perforated ; abscess.....	"
12	Manson C.....	20	First	About 1 week..	Perforated ; sloughed off, not found	"
13	Walter M.....	20	Second	6 days	Perforated ; small abscess.....	"
14	Henry W	56	Many attacks....	2 days.....	Perforated ; abscess.....	"
15	Mrs. H.....	36	.....	5 days.....	Perforated ; abscess.....	"
16	John H.....	38	Several attacks..	3 days.....	Perforated ; abscess.....	"
17	Fred. S	36	Several attacks..	About 8 days..	Perforated : abscess.....	"
18	Edward K.....	27	.....	About 1 week..	Perforation ; abscess	"
19	Richard C.....	11	First	5 days.....	Perforation : abscess	"
20	Napoleon D ...	38	Second	About 1 week .	Perforation ; abscess	"
21	Mrs. C.....	28	First	One week.....	Perforation ; general suppurative peritonitis....	Died.
22	William C.....	19	First	Five days.....	Perforation ; abscess	Recovery.
23	Henry McG....	28	Sixth.....	*Six days	Strictured and distended, mucous membrane ulcerated	"
24	William K.....	14	First	Five days.....	Perforation ; sloughed off.....	"
25	John G.....	50	Several attacks..	14 weeks	Perforation ; sloughed off ; abscess burrowing in abdominal cavity.....	Hepatic abscess subsequently.
26	Meredith H....	30	Third	4 days.....	Perforated ; general suppurative peritonitis	Recovery,

27	Wm. G. C.....	16	Third	1 day	Strictured and distended, lymphangitis, ulcerated mucous membrane	Recovery.
28	Albert M.....	26	Second	6 days	Almost perforated.....	"
29	James C.....	19	Fourth	4 days	Perforation and abscess	"
30	Celina C	22	First	4 days	Perforation ; abscess	"
31	Mary S.....	23	Third	3 days	Perforated ; lymphangitis	"
32	John D	44	†About 80.....	7 weeks.....	Obliteration of base ; large concretion	"
33	Patrick H.....	27	First	8 days	Perforation ; abcess.....	"
34	Edith P.....	11	First *.....	7 days	Perforation ; general suppurative peritonitis....	Died (9th day).
35	Alex. A.....	6	First	3 days	Transfixed by pin ; abscess.....	Recovery.
36	Alex. M.....	17	Third	3 days	Perforation ; abscess.....	"
37	Frank J.....	23	Second	3 days	Perforation ; abscess.....	"
38	Harry F.....	30	Eighth	8 days	Perforation ; abscess	"
39	Stewart M.....	45	Many attacks....	20 days	Perforation ; abscess..... ...	"
40	Peter C.....	33	Tenth	5 days	Perforation ; abscess....	"

* Subacute. † 3 or 4 every year for 21 years.

ADHESIONS OF THE SOFT PALATE AND THEIR TREATMENT.*

By H. D. Hamilton, B.A., M.D.
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Under this name it is intended to refer to some cases in practice which may prove of interest to a few of the profession in general as well as to laryngologists in particular.

Case I.—A female, age 45, a widow, applied in the fall of '92 for relief from a totally obstructed nose, a muffled voice and frequent attacks of hoarseness; these symptoms having grown more pronounced during the past five years. History of acquired syphilis ten years before. Examination showed naso-pharynx completely shut off from oro-pharynx by a tense veil of cicatricial tissue, passing directly from the hard palate to the posterior pharyngeal wall, there being no evidences of uvula or posterior pillars anywhere.

The treatment here consisted in relieving the great tension first, by severing the most prominent bands of the adhesion, while the tongue was pressed forcibly down. When these wounds had healed, under the frequent use of a tongue-depressor to keep the cut surfaces apart, the centre of the occlusion was cut through, first passing a hard rubber Eustachian catheter behind by way of the nose to serve as a guide. This opening was enlarged by removing parts of the cicatrix and dilating with large bougies several times a week during a period of three months. The patient left the city at that time and was not seen till last spring (1894), when the opening still remained, though no dilating had been persisted in.

Case II.—Female, aged 32, married five years; one healthy three-year-old child; no other pregnancies; no history of acquired syphilis.

* Read before the Canadian Medical Association at St. John, N.B., Aug. 23, 1894

This patient was left in my charge by Dr. George W. Major before he went abroad last March. She had applied for treatment some months before, suffering chiefly from inability to breathe through the nose and loss of smell, loss of hearing on right side, loss of voice for almost six months of each year, and a deep ulceration behind the right auricle. Under constitutional treatment for syphilis the hearing improved and the ulceration healed. Local treatment on the adhesions of the palate—which are about to be mentioned—had just been commenced when an acute attack of laryngitis supervened.

In this condition she was first seen by me, and on examining the throat from the front, the uvula hung against the posterior wall of the pharynx, and the posterior pillars were absent. There were no signs of adhesions until by the use of the rhinoscope and by digital examination it was found that about half an inch up, the posterior surface of the soft palate was completely adherent to the posterior pharyngeal wall.

This condition must have come on at the age of 14 years, for since that time the nose had not been used for breathing. At 12 years the patient began to suffer from an ulcerated throat, and for two years it never healed altogether. During these two years she had diphtheria and scarlet fever, and since that time she has been a victim to quinsy every winter—has had bronchitis and hoarseness and loss of voice for months at a time.

The treatment here begun by Dr. Major was constitutional until the parts were in a sufficiently healthy state for local treatment, which was directed towards freeing the uvula, at that time totally bound down. Later on, parts of the cicatricial tissue were removed *en masse*, so opening up a space behind the soft palate. In this condition the patient came under my charge, and as soon as the laryngitis had subsided attention was directed towards perforating the partition still existing between the mouth and nose. This proved more difficult than in Case I, owing to

the adhesion being high up out of sight and near the Eustachian tubes. The catheter through the nose, combined with digital examination, showed the thinnest part of the adhesions, then with the left forefinger as a guide, a curved knife, adapted from Pean's uterine knife, was passed up and an opening made. The knife was worked laterally and in a slightly forward direction to avoid the Eustachian tubes until the forefinger could pass into the naso-pharynx. This was only with difficulty, as the adhesions seemed to span the vault to the extent of one inch, showing how overgrown the tissues covering the posterior wall must have been. After a day or two a Meyer's ring knife was curved and passed behind the palate and the posterior wall scraped as for ordinary adenoid growths. At the sittings the pain was reduced by the local use of cocaine. During the intervals of treatment the patient used the forefinger and Griffin's specially devised dilator to keep the surfaces apart. A solution of boric acid was used by means of a post-nasal syringe. Since the first opening was made through the adhesions the patient has improved steadily in health, the resonance of the voice, hearing and sense of smell have returned.

This deformity is constantly being alluded to in works upon the throat. Sir William Turner, of Edinburgh, in 1860 reported finding a case of complete adhesion of the soft palate in the dead subject, and referred to similar cases reported by Rudtroffer in 1805 and Otto in 1813. Later, Mauriac and Verneuil each reported cases in 1876.

Cohen reports a case, and E. Harrison Griffin in 1888 reports another on which he operated successfully, the opening having persisted when seen five years after.

The object of bringing this subject before you, however, is not to show what cases have been reported, nor especially to add any new ones to the already long list (although Case No. 2, that caused by congenital syphilis in the adult, is sufficiently uncommon to deserve notice), but it is desired to show how an attempt to remove such

complete obstructions may relieve many serious symptoms, though the removal may be only partially successful.

The cases operated upon improved as soon as the obstruction was removed. The voice, hearing and sense of smell returned, and the attacks of laryngitis have so far been averted.

Treatment.—Interference in these cases has been variously commented upon in the literature on the subject.

Dr. Rothenburg, in 1879 (*Wein Medizin Presse*, No. 33), advocated removal of masses of the cicatricial tissue (as was practiced in Case No. 2.

Dr. Solis Cohen, in 1879, in his work upon "Diseases of the Throat and Nasal Passages," uses the knife or the incandescent cautery, the cut edges always being cauterized thoroughly to prevent re-adhesion. Bits of lint and tents are also advised in some cases for a like purpose; or he uses tubes introduced into the nostrils and pharynx, and sometimes passes ligatures through the edges of the sound parts of the palate and draws these forward by making them fast to the ears. An opening on each side where the palate is healthy has sometimes been suggested as a better means of avoiding re-adhesion.

Dr. E. Harrison Griffin reports success from the use of his specially devised curved knife, to be systematically followed by dilating the parts with his pharyngeal dilator (shown here). The physician is to do this at first, and the patient should have a dilator to use regularly at home

Morrell Mackenzie, in 1880 (Diseases of the Pharynx, Larynx and Trachea), mentioned dilating with bougies, or actual divulsion, besides galvano-cautery.

Dr. Charles E. Sajous, writing in 1892 for *Hare's Practical Therapeutics*, merely states that interference is necessary when the adhesions are complete.

Dr. J. N. Mackenzie, in 1893, writes in Morrow's work on Syphilology upon the subject, giving most of the methods as above, and shows that many cases are very discouraging in the results obtained.

Dr. Delavan's suggestion of cauterizing the freshly cut edges with mono-chloracetic acid is worthy of mention. Delavan hearing through Dr. Andrew H. Smith that this acid caused an eschar to form which remained fixed until perfect cicatrization had occurred beneath, tried it with satisfactory results in a case reported in 1883. (*Transactions of American Laryngological Association*, 1883, page 185.)

Dr E. Fletcher Ingals in *Burnett's System of Diseases of Ear, Nose and Throat*, 1893, speaks favorably of many of the above procedures.

In conclusion, the causes which have been found to produce this condition may be briefly referred to.

Deep ulceration of the opposing surfaces of soft palate and pharyngeal wall are generally held to be necessary, but Schech maintains that even superficial erosion of one surface only may lead to the same result.

Syphilis, either acquired or congenital is of course the great cause, and Schech points out the ease with which the occlusion occurs when the palate is once perforated.

Adenoid growths, so common in congenital syphilis, were undoubted active in Case II.

Dr. Cohen mentions scrofula, lupus, malignant sore throat of diphtheria and phagedena.

Traumatism and local action of caustics, amongst other causes, have produced the condition. Galvano-cautery, when used excessively upon the throat, was the cause of adhesions of the posterior pillars of the pharyngeal wall in one case which came before my notice recently.

Reviews and Notices of Books.

Diseases of the Nose and Throat. By F. DE HAVILAND HALL, M.D., F.R.C.P., London. With 2 coloured plates and 59 illustration. London: H. K. Lewis, 136 Gower street, W. C. 1894.

It is with pleasure that we note the appearance of a text-book, albeit small, on the diseases of the nose and throat, by this talented British specialist, Dr. de Haviland Hall.

It is a thorough work, and it is rather difficult to particularize on any spacial portion.

The treatment certainly lacks that vigorous and heroic stamp which characterizes American laryngologists, and which is indeed not a thing to be greatly regretted.

Another feature is the absence of a detailed description of the anatomy of the parts, which is rather to be recommended, as before tackling a special subject the student is supposed to be *au fait* in the anatomy and physiology of the region.

On the other hand, the morbid anatomy and pathology is thoroughly worked out, especially from the bacteriological standpoint.

The author most markedly discountenances the over-use of the cautery in nasal troubles, there being the risk of erysipelas, otitis media, ocular troubles, etc.

The book is profusely illustrated, clearly printed and altogether well gotten up.

As a text-book for physicians and students it is strongly to be recommended.

Politzer's Text Book of the Diseases of the Ear and Adjacent Organs, for Students and Practitioners. Translated by OSCAR DODD, M.D.; edited by SIR WILLIAM DALBY, M.B., Cantab. With 330 original illustrations 739 pages. Philadelphia: Lea Brothers & Co., Sansom street. London: Balliere, Tindall & Cox. 1894.

We have before us the third edition of this monumental and classic work on the ear. The subject has been more exhaustively treated than in the previous editions.

It is exceedingly difficult to criticize a work of this kind, while at the same time the praise of it seems to be a task of supererogation. As in the former editions, the first fifty pages or so are devoted to a minute description of the anatomy of the ear and its adjacent cavities, much stress being laid on the attic formation.

In the pathological portion of the work full attention is given to the part played by bacteria in the various aural diseases, especially those secondary to scarlatina.

The description of the various form of mastoid diseases is exhaustive and clear, and the description of the various operations on the mastoid and the posterior wall of the meatus is well done and valuable to the surgeon and specialist.

Politzer adheres to the use of the chisels and mallet in these operations in preference to the drill.

The work has been very fully and carefully annotated by the English editor, Sir William Dalby, which adds greatly to its value. Dr. Oscar Dodd, of Chicago, has translated the book carefully and deserves great credit for his laborious part of the work.

The illustrations are numerous and well executed, and taken all in all the volume well maintains its position as one of the first authorities on the subject of ear diseases in the world.

Saunders Question--Compendis No. 14. Part I.—Essentials of Refraction and the Diseases of the Eye; by EDWARD JACKSON, A.M., M.D., Professor of Diseases of the Eye in the Philadelphia Polyclinic, etc. Part II.—Essentials of Diseases of the Nose and Throat; by E. B. GLEASON, S.B., M.D. Second edition, revised; 124 illustrations. Philadelphia: W. B. Saunders, 925 Walnut street. 1894.

As a rule we are not in favor of these small compends, the skimpiness of the work generally interfering with its thoroughness.

However, this book certainly forms an exception, and Dr. Jackson has in his portion made the most of his space.

The work is really of the nature of a small text-book, the subject matter being treated of in the manner of questions being put and answered.

It is really wonderful to observe the way in which the

author has managed to bring out the salient points of the subjects he touches on.

There are a few misprints, pointing to haste in going over the proof sheets. It is freely illustrated and well printed and will be of use to the tyro in ophthalmology.

The second part of the volume deals with diseases of the nose and throat and is written by Dr. Gleason. It strikes one immediately as not being so carefully written as the section on eye diseases. A certain crudeness in etymology is apparent, possibly arising from an American attempt at effect; *e. g.*, laryngology, we are told, is the art of seeing (?) and knowing what you see in the larynx.

The illustrations, which are numerous, are nearly all borrowed.

A Text-Book of the Diseases of the Ear. By Dr. Josef Gruber, Professor of Otology in the University of Vienna, etc. Translated from the second German edition and edited, with additions, by Edward Law, M.D., C.M., Edin., M.R.C.S. Eng., and Coleman Jewell, M.B., Lond., M.R.C.S. Eng. With 165 illustrations, 70 coloured figures on 2 lithographic plates. Second English edition. London: H. K. Lewis, 136 Gower street, W. C. 1893.

It is but a few months since we reviewed the first edition of this masterly work of Professor Gruber's and this edition being exhausted inside of two years, we are again called on to review this, the second edition.

This favorable reception of the book is a high honour for Dr. Gruber and recognition of his talents.

The present edition is considerably more voluminous than the first, and this is mainly due to the interpolation of numerous useful and valuable notes by the English editors; at the same time the original translation of Dr. Gruber's treatise is unaltered.

Our old friend Dr. Howden, of Durham University, has attended to the revision of the anatomical portion of the work and his interpolated notes are elaborate and clear.

Dr. Coleman Jewell has written an entire section on the intracranial complications of ear diseases, their cause, course and treatment. Of this we can not speak too highly, it adds greatly to the value of the work.

Of the master's own portion of the book it is really superfluous to speak, especially after our comparatively recent review. His utterances are *ex cathedra*, and especially valuable as being the result of years of experience.

As a text-book this treatise is not to be surpassed, and we are deeply indebted to Dr. Law and Mr. Jewell for their translation of it.

Post-Nasal Growths. By CHARLES A. PARKER, Assistant Surgeon to the Hospital for Diseases of the Throat, Golden square, London. W. K. Lewis, 136 Gower street, W. C.; 1894; pages, 98; size, 8vo.; price, 4s. 6d.

The writer's object in this short work is to bring before the profession in general the results of investigations into the method of breathing in cases of nasal obstruction. This, he claims, is nasal during sleep in every case where the nose is not totally obstructed.

Chapter II, therefore—which is given up entirely to demonstrate this statement—forms the foundation of the work, and is reprinted from the St. Bartholomew's Hospital Reports, Vol. XXIX.

To make the work more useful to students three other chapters are added, which complete the present knowledge of post-nasal growths, and state, in a very fair light, the indications for their removal. The work is not put forward as exhaustive, and yet very few points are wanting to make it so.

The careful study of 50 cases of post-nasal growths is undertaken on the suggestion of Dr. Grenville Macdonald, who had already written in the second edition of his "Diseases of the Nose," 1894, that "the instinct of nose breathing appears to assert itself in spite of sometimes great difficulties, and especially during sleep."

The observations above referred to are thorough, and the conclusions drawn therefrom are justly argued out, the writer keeping his text well in view, at the risk of repetition. The style is clear and impresses the importance of the subject in hand.

Chapter I, in giving "a general sketch of post-nasal growths," brings out many important details. If illustrations were to be added, one representing the typical facies would

greatly simplify the description of this peculiar formation. Very important advice is given regarding the proper after-treatment of infants, and of children the subjects of congenital syphilis, in order to avoid disappointing results from operations. Such points as the influence of the teething age in producing these growths, and the possibility of a dry oro-pharynx co-existing with the overgrowth further up, are worthy of notice, as well as is the benefit to be derived from operation while the middle ear affections are still present.

In chapters III and IV many old ideas are set aside and more rational ones put forward. Standard books are frequently quoted, especially those of MacDonald and Bosworth. No mention is made of the surprising rapidity with which these growths may disappear or reappear in certain persons, so causing very contradictory diagnoses to be made at different examinations. The manner in which infants of a few weeks old are prevented from nursing in extreme cases might also be added to the list of symptoms. The work is very complete, however, and should easily attain its purpose of converting those in the profession who would leave these growths entirely to time.

A System of Genito-Urinary Diseases, Syphilology and Dermatology. By various authors. Edited by PRINCE A. MORROW, A.M., M.D., Clinical Professor of Genito-urinary Diseases, formerly Lecturer on Dermatology in the University of the City of New York; Surgeon to Charity Hospital, etc. With illustrations; in three volumes. Volume III, Dermatology. pp. 976. New York: D. Appleton & Co. 1894.

The editor and his collaborators have, with this volume, finished their labours on the "system." The work has been carefully planned and effectively carried out in all its parts, and the present volume is no exception in point of excellence. A systematic work on diseases of the skin is not at all easy to arrange, owing to the conflicting views held by the workers in this department regarding the pathology of the different maladies.

The classification is Crocker's modification of Hebras, with certain changes. The class of hyperæmias has been done

away with and the whole included under inflammations, which is an advantage, as in many cases it is impossible to draw the line between one and the other and the former is merely the first stage of the latter. The strict pathological basis of classification has at times to give way to clinical convenience, as, for instance, inflammations of the glands of the skin are not classed under the heading of inflammations, but under diseases of the appendages of the skin. The exanthemata are included in the work, and very wisely so, for the eruption is the most characteristic symptom and in many cases the one which first attracts attention. The erythemas are very fully taken up, no less than thirteen varieties being described. And so through the whole work, every disease is described most carefully and in the most complete manner.

There are no less than twenty-seven contributors to this volume, comprising the best known men on the Continent, those who have devoted their time and energies to the study of these diseases and also to imparting the knowledge so gained to others. This makes the book more useful, because it is written by practical men used to teaching and with a knowledge of the requirements of the seeker after information.

The illustrations, both coloured plates and woodcuts, are well executed and well chosen, and are very useful in elucidating the text, for it is notoriously difficult to describe a skin disease and equally difficult to gain a clear comprehension of the disease from the description. The whole work, and especially this last volume, is worthy of all praise and will prove a useful and popular book which every progressive physician will wish to have in his library, both for reference and study.

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De L'Agrandissement Momentane du Bassin. Par ADOLPHE PINARD. Paris.

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Traumatic Periostitis. By B. M. RICKETTS, M.D., Cincinnati, Ohio, Chief Surgeon C. P. and V. Rd.

Dr. Unna's Plaster-Mulls. By HORATIO R. BIGELOW, M.D. From the *Medical News*, September 23, 1893.

La Femme et la Bicyclette. Par le Dr. JUST CHAMPIONNIERE, Paris. Extrait de la *Revue du Touring-Club.*

Circumcision. The Last Fifty of a Series of Two Hundred Circumcisions. By B. MERRILL RICKETTS, M.D., Cincinnati.

Increasing the Length of Bones. By L. OLLIER, Hotel Dieu, Lyons, France. Translated by B. Merrill Ricketts, Ph.B., M.D., Cincinnati, Ohio.

Stomatitis Neurotica Chronica. By A. JACOBI, M.D., New York. Reprinted from the *Transactions of the Association of American Physicians*, 1894.

Report of a Case of Carcinoma of Ileum; Intestinal Obstruction Relieved by Anastomosis with a Murphy Button. By B. MERRILL RICKETTS, M.D., of Cincinnati.

Obliteration of Congenital Pigmentations. By B. MERRILL RICKETTS, Ph.B., M.D. Cincinnati, Ohio. Reprinted from the *Journal of the American Medical Association*, January 20, 1894.

Pregnancy After Ventral Fixation of the Uterus. A Report of Four Cases. By GEORGE E. EDEBOHLS, A.M., M.D. Reprinted from the *Transactions of the New York Obstetrical Society.*

On the Use of the Common Ragwort in the Treatment of Disorders of Menstruation. By WILLIAM MURRELL, M.D., F.R.C.P. London. Reprinted from the *Medical Press and Circular*, April 25, 1894.

Diagnostic Palpation of the Appendix Vermiformis. Cases of Appendicitis. By GEORGE M. EDEBOHLS, A.M., M.D, Reprinted from the *American Journal of the Medical Sciences*, May, 1894; the *Post-Graduate*, April, 1894; and the *New York Journal of Gynecology and Obstetrics*, February, 1894.

Literary Note.

—The well known house of the F. A. Davis Co., of Philadelphia, will issue, in September, a work which will be most favourably received by the medical profession. It is entitled *Obstetric Surgery*, and is written by Drs. Egbert H. Grandin and George W. Jarman, gentlemen who, from their long connection with the largest and most widely known maternity hospital in the United States (the New York Maternity Hospital), are peculiarly fitted to expound the subject from the modern progressive stand-point of election.

A companion volume, dealing in the same terse, practical manner with pregnancy, normal labour, and the physiological and pathological puerperium, is in active preparation by the same authors.

Canadian Medical Literature.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL.]

PERIODICALS—AUGUST, 1894.

CANADIAN PRACTITIONER.

(1.) Headache—Daniel Clark, p. 560.

(2.) Fracture-Dislocations of the spinal vertebrae—A. B. Walford, p. 567.

Influenza, its general features—L. M. Sweetman, p. 578.

CANADA LANCET.

Atrophic Rhinitis—Price Brown, p. 353.

Gastrictasis—Charles G. Stockton, p. 360.

DOMINION MEDICAL MONTHLY.

Papilloma of the Ovaries—J. F. W. Ross, p. 33.

Tubage in septal deformity—Price Brown, p. 38.

(3.) Psychic healing—Geo. W. Ayleswood, p. 43.

Removal of inter-articular cartilage from the knee joint—R. Harbottle, p. 46.

CANADA MEDICAL RECORD.

(4.) Pocket boroughs in hospitals—(Editorial), p. 261.

L'UNION MEDICALE DU CANADA.

(5.) Rein flottant et néphropexie—O. F. Mercier, p. 393.

MARITIME MEDICAL NEWS.

Address before the Nova Scotia Medical Society—C. J. Fox, p. 345.

(6.) Problems of infantile feeding—G. C. Jones, p. 350.

(1.) The author first comments on the great frequency of this trouble, saying that nine out of ten patients suffer from it, more or less. He calls attention to the fact that the pain is not at all commensurate with the lesion in the brain, for many serious disease of the brain exist where there is little or no pain, and very severe pain occurs without any gross lesion, as in the clavus hystericus. This is accounted for by the fact that the brain proper is insensitive, and again many of the lesions occur in the insane who, having a lower vitality than the sane, are less sensitive The indications for treatment are to relieve the immediate

suffering and to remove the cause. A note of warning is sounded regarding the use of narcotics.

The conclusions of the author are as follows :

1. To direct attention to the importance of studying the reflexes in our diagnosis.

2. In trusting more to general hygienic measures to promote health than to local or general medication.

3. To study *ab extra* causes which are more general and potent than we suppose. We are often deceived because of the local distress appearing so prominent.

4. Not to delude ourselves into the idea that a benumbing treatment is curative, but, on the contrary, it often handicaps the heroic efforts of nature to again reach healthy conditions.

5. To check the growth of the ever-increasing army of narco-maniacs by professional reticence in the use of drugs. Headache and its many anodynes are fruitful sources through which this baneful habit is acquired.

6. The classifications and remedies are legion, but the treatment must be applied to *genera* rather than to the *species*, as common causes lying in deranged cell life do produce multifarious manifestations.

(2.) This is a plea for early surgical interference in these cases where paralysis exists. If the paralysis comes on immediately after the accident, it is certain that either compression or laceration of the cord exists, or both. The pressure may be from bone, fluid effusion or a foreign body. Careful extension and counter extension is recommended, but not much is expected from that. An exploratory incision is to be made over the affected vetrebræ, and the operator must be guided by circumstances. Two cases are narrated in which this was done, one five days and the other two years after the accident. The first case lived nine hours with some relief to the symptoms ; the other case has been slowly improving since, until at present he can move the toes of both feet. The pertinent query is made regarding both cases, Should this operation have been done earlier ?

(3.) This is a short paper on hypnotism, by a general practitioner. "There can be no doubt entertained by anyone who investigates these things honestly, that there are things seen, heard and done—described under one or other of these names (mesmerism, hypnotism, etc.)—which cannot be explained upon a physical basis, as we at present understand physics." The writer gives several instances of the power of mind over matter, as the creepy sensation produced by a pencil scratching on a slate, being reproduced by the mind by seeing a pencil held in the same way. "In my cases I asked the patient to look steadily at the bright end of a metallic thermometer case, and then talked to them in a quiet, monotonous tone of voice."

Several cases are reported in which very good results were obtained in headache, sleeplessness and similar complaints.

The conclusions are, that every general practitioner should study this as a valuable addition to his methods, also that unprofessional persons should not be allowed to use it, but physicians only.

(4.) This is a rather *ex parte* attack upon the Montreal General and Royal Victoria Hospitals, because, with a limited number of private wards, the corporation does not allow the treatment of private cases by others than the members of the medical staff.

The statement is made that the family physician is not allowed to attend cases unless he is on the staff, and this statement is not the truth, the whole truth and nothing else but the truth, for we have personal knowledge of cases where the family physician has attended cases although not a member of the staff.

We are sure that there is no deep laid plot on the part of the medical board to steal patients, but that the paucity of private wards is at the bottom of the whole trouble, the managing committee keeping only a few private wards for the convenience of the medical staff, their policy being to give as much space as possible to the poor and needy, the

private wards, in their opinion, merely paying expenses and not being a material source of revenue to the hospital.

(5.) After speaking of the diversity of the symptoms and the difficulty of diagnosis, the writer goes on to speak of the treatment, and divides the cases into two classes, the simple and complicated. In the first class, rest in bed with the application of a well fitting belt and pad are sufficient to afford relief. In the severer cases surgical interference is necessary.

A case report is given of a patient suffering from this malady where the writer operated successfully. An incision was made in the lumbar region parallel to the spine. The kidney was denuded of its fatty capsule, two sutures of heavy silk, sterilized in absolute alcohol, were passed through the substance of the organ, and a small piece of the capsule proper dissected up so that firm adhesions might form between the organ and the surrounding parts. The upper suture was fastened to the twelfth rib, and the other to the muscles and fascia at the lower part of the wound. After cleaning and drying the parts, the incision was closed with catgut sutures. Pain was relieved by the operation and the patient made a good recovery, going about as usual in less than a month.

(6.) If the wet nurse is not available, as she rarely is on this side of the Atlantic, the writer strongly recommends the mixture introduced by T. M. Rotch, of Boston, which is as follows: Milk ℥ii, cream ℥iii, water ℥x, milk sugar ℥vi, gr. xlv., place in steamer for thirty minutes, add lime water ℥i, place on ice until needed. Most of the patent foods contain too much starch and too little fat, sugar and albuminoids. Besides many of them are acid instead of being faintly alkaline. He thinks that pasteurising is preferable to boiling. that is, the milk should not be heated beyond 176°F., as further heating interferes with its nutritive qualities.

Society Proceedings.

THE CANADIAN MEDICAL ASSOCIATION.

Reported by DR. J. N. E. BROWN.

The twenty-seventh annual meeting of the Canadian Medical Association was held in St. John, N.B., August 22nd and 23rd.

Dr. Harrison, of Selkirk, presided, and Dr. F. M. G. Starr, of Toronto, made an able secretary.

The Maritime provinces were well represented, while Montreal and Toronto sent a number of their best men.

Dr. Duncan Bulkley, of New York, represented the American Medical Association, and Dr. Jonah, of Eastport, Maine, the Maine Medical Association.

The wives of the medical men of St. John gave a reception to the visitors, which surpassed anything yet provided in the social way at the meetings of the Association. The ball was a most brilliant affair. The hospitality of the Maritime men was unbounded. It was unfortunate that more of the western men were not present. Better railway rates should have been given by the railways. The I.C.R., however, did its duty in this respect. Many of the visitors took advantage of the cheap excursions to the various places of interest in the Maritime provinces. All were delighted with the scenery. It afforded a splendid holiday for the visiting men.

The following programme was followed :

A Year's Experience in Appendicitis—James Bell, Montreal.

A Case of Tuberculosis of the Arm of 14 Years Standing Cured by Inoculation with Erysipelas—W. S. Muir, Truro, N.S.

The Treatment of Diseases of the Ovaries and Fallopian Tubes—A. Lapthorn Smith, Montreal.

The Use and abuse of the Various Cautery Agents in the Treatment of Nasal Affections—E. A. Kirkpatrick, Halifax.

The Present Status of Asthenopia—F. Buller, Montreal.

Eye-Strain Headache—J. H. Morrison, St. John.

Note on Epilepsy—W. H. Hattie, Halifax.

Some Functional Derangements of the Liver—J. E. Graham, Toronto.

The Prevention of Tuberculosis—P. R. Inches, St. John.

The Prevention of Tuberculosis—J. F. MacDonald, Hopewell, N.S.

Interscapulo-Thoracic Amputation ; Removal of Large Enchondroma of the Pelvis—F. J. Shepherd, Montreal.

A Demonstration of the Murphy Button for Intestinal Anastomosis ; Exhibition of a Galvano-Cautery for Using the Street Lighting Electric Current—A. Lapthorn Smith, Montreal.

Adhesions of the Soft Palate and their Treatment—H. D. Hamilton, Montreal.

A Medico-Legal Romance—J. T. Steeves, St. John.

Some practical points in the recognition and treatment of Diseases of the Skin—L. Duncan Bulkley, New York.

Brain Operations (with exhibition of patients)—W. H. Hingston, Montreal.

Hysteropexy—K. N. Fenwick, Kingston, Ont.

Dr. Bell's paper was one of the best of the Association and provoked a hearty discussion. (See page 177)

Dr. HINGSTON, of Montreal, said the results of Dr. Bell were remarkable, and spoke strongly in favour of surgical interference, but he had often waited in such cases when he had been called as a consultant, and he had only once to regret doing this. He thought young medical men should not enter the abdomen in such cases. There was a difference between their skill and that of Dr. Bell ; a difference between cases in the country at home and cases in an hospital ; and also a marked difference in the cases. Only the severer ones that required operation were sent to the hospital.

Sir JAMES GRANT spoke of two cases where he was tempted to operate, but as he found one of the patients was gouty and the other rheumatic, he refrained from surgical interference. They both recovered. It required a great deal of observation and judgment to deal with this disease.

Dr. F. J. SHEPHERD, of Montreal, pointed out that the sur-

geons always got the worst cases. As a result, it was difficult, from a comparison of statistics, to determine just what was the proportion of cases which should be operated upon, and how many should be treated medically. His plan was to operate after the acute attack had subsided, as a rule. Regarding the causation of the tenderness over McBurney's point, he believed it was due to the inflamed condition of the mesenteric glands, not to the appendix. The appendix was not always under McBurney's point, it was sometimes in the pelvis, on the left side, up under the liver, or in other parts of the abdomen.

Dr. F. STRANGE, of Toronto, thought that it should be treated as any other abscess formation—the pus to be evacuated as soon as it was found to be present. He usually operated after the acute stage was over. He had not regretted the policy of non interference during the acute stage.

Dr. J. H. CAMERON said he followed Treves in such cases—to wait until the pus formed, then open and drain. He had had good results from following this plan.

Replying, Dr. BELL said that it was conceded by all that no man could say definitely just when to operate in all cases. Out of forty cases in which he operated, there was perforation in thirty-two ; in three the appendix was gangrenous ; in two it was bound down by adhesions ; in three the symptoms pointed to very grave inflammation, yet no abscess was found and the gut was not perforated. He used to follow the expectant plan, and his losses were much greater than now, under the new plan. The most extreme mortality after these operations was only about two per cent. If the patients were left alone, perforation and collapse might occur at any moment. He believed the method advocated by Treves was not according to the principles of true surgery.

Dr. W. S. MUIR, of Truro, read an interesting report of a case of local tuberculosis of the fore-arm of fourteen years standing, in a female, aged thirty-nine. The bacillus was found in the discharges from the sinuses. The patient was anæsthetized, the sinuses scraped, and iodoform dressing applied ; but little improvement followed until after five weeks, when,

quite accidentally, the micrococcus erysipelatosus invaded the wound. The attack of erysipelas was very severe and nearly cost the patient her life. Shortly after her recovery from the erysiplatous attack, complete healing of the tubercular affection took place. Photographs were shown of the healed arm.

Dr. E. A. KIRKPATRICK, of Halifax, in his paper on Cauterization in nasal affections, dwelt on the importance of extreme carefulness in the application of caustics to the nasal mucous membrane. In two many instances it was overdone, especially in reducing hypertrophic rhinitis. He had seen cases where the membrane was destroyed, and in some cases where serious mastoid affection had followed. He recommended chromic acid applications to the anterior nares and the galvano-cautery to the posterior.

Dr. A. LAPTHORN SMITH'S paper on the Treatment of Diseases of the Ovaries was an elaborate description of his methods of dealing with these troubles.

Dr. BULLER'S paper on Asthenopia was of special interest, particularly to the eye specialists present. (See page 170.)

Dr. MORRISON, of St. John, read a paper on Eye-strain Headaches. Tenotomy, he said, relieved some of the reflex troubles for a time, but did not get at the root of the matter. The real trouble was due to imperfect curvature (and it might be very small) of the cornea. This condition, added to the extra work of the delicate muscles of accommodation when much near work was to be done with the eyes, overtaxed the ciliary muscle, and it either gave out or produced those reflex headaches, which were so distressing. The pain was usually situated in the neighbourhood of the temples, but sometimes extended to the occiput and down the back; numbness sometimes occurred in other parts of the body; digestive disturbances were also, at times a marked symptom. A proper correction of the myopia, hypermetropia and astigmatism, and the administration of tonics removed the insufficiency. The Doctor reported some of the interesting cases he had had where the treatment had been misdirected, because the eye had not been considered

in the examination. The muscle would recover just as a sprained or shattered limb would if treated properly. The use of proper glasses was a crutch for the strained ciliary muscle.

Dr. HATTIE, of Halifax, presented an interesting paper on Epilepsy. He set forth a theory as to its causation. He referred to the various changes which are generally believed to take place in the brain after a nerve storm. But the microscopic condition of the brain tissue following a fit, was like what the appearance was before one. His theory was that it was due to the presence of some toxic irritant, possibly the result of defective metabolism, or of imperfect elimination of tissue debris. Anæmia was usually present in these cases, and was significant. He had tried intestinal disinfectants in conjunction with pot. bromide, and found a marked diminution in the number of convulsions. His results were arrived at from the observation of this treatment in a large number of cases.

The Nomination Committee brought in the following report: President, Dr. Bayard, of St. John; Grand Secretary, F. N. G. Starr, of Toronto; Treasurer, H. B. Small, of Ottawa. Provincial officers: Ontario, Vice-President, Dr. Shaw, of Hamilton; Secretary, Dr. Fenwick, of Kingston; Quebec, Drs. Armstrong and Campbell, of Montreal; New Brunswick, Drs. McLaren and McNally; Nova Scotia, Drs. McKeen and Hattie; Manitoba, Drs. Blanchard and Nelson; North-West Territory, Drs. Haultain and Macdonald; Prince Edward Island, Dr. Maclaren and McNeil; British Columbia, Drs. Edwards and Richardson.

Dr. BAYARD delivered the address in Medicine, taking for his subject the influence of the mind on the body. The paper outlined the anatomy and physiology of the nervous system, specially referring to the nerve route of pain. Instances were given where emotions of various sorts caused contraction or dilatation of the terminal arteries with hyperæmia and secretion in glands, or anæmia and checked secretion. The various nervous diseases were referred to, their causation discussed, and their prevention recommended, through a reformation in our educational and social systems.

As an outcome of one of the points referred to in the address at the suggestion of Dr. Hingston, Dr. Bayard moved, seconded by Dr. Hingston, that the system of education generally pursued in the Dominion of Canada draws too largely upon the brain tissue of children and materially injures the mental and bodily health. Drs. Cameron, of Toronto, and Powell, of Ottawa, thought the terms of the resolution were too sweeping—that there was no specific statement as to what department of the school system was at fault, nor to what portion of the Dominion it more especially applied. Our young people, Dr. Cameron thought, were not suffering (the older people neither) from too much education. The educational system had been the subject of the best thought of our best men, and he considered the motion too condemnatory. A resolution was then passed that the matter be referred to a committee, consisting of Drs. Powell, Hingston, Graham and Bayard.

The committee appointed to report on the President's address reported on the matter of inter-provincial registration. It was adopted.

Dr. DANIEL moved, seconded by Dr. POWELL, that a committee be appointed in which each of the provinces should be represented, to draw up a form of Medical Act, which, after being adopted by this Association, should be presented to each Provincial Legislature, to be by them passed into law; and that the committee that brought in the report be asked to name such committee.

Dr. BULLER moved, seconded by Dr. LAPTHORN SMITH, that a committee be appointed, with power to add to their number, to consider the best means of obtaining a uniform standard of medical education for the Dominion of Canada, and the said committee report at the next meeting of the Association. This was carried.

The discussion over the above question was long and animated and taken part in by several of the men from the different provinces represented at the Association.

Dr. J. E. GRAHAM read a paper on Some Functional Derangements of the Liver. He pointed out the various functions

of the liver, dwelling more particularly on the action of the hepatic cells in warding off poisons of various sorts from entering the general circulation. When these cells became inactive by reason of the overpowering action of the poison the condition of hepatic inadequacy was brought about. The condition resulting from this was thought by some to be due to "renal inadequacy." Urea was manufactured in the liver by these hepatic cells. They were also the storers of glycogen, and when these functions were impaired various clinical phenomena were observable. The clinical symptoms might be included under the general term biliousness. As to treatment, it was necessary to preserve the integrity of these hepatic cells. The diet should be restricted and regulated. Milk was highly valuable on account of its easy assimilation and diuretic action. Light gymnastics to increase the circulation were very helpful, particularly in women. Massage over the abdomen was useful. Free purgation was a very important point. For this last calomel was an old stand-by; enomymus and podophyllum were also valuable. General massage, bathing and the use of mineral waters were useful where the lessened amount of urea indicated incomplete metabolism.

Dr. P. R. INCHES' (St. John, N.B.) paper on Tuberculosis was well received. He advocated the necessity of increased activity on the part of the profession, the public and the government in dealing with this dangerous disease. The patients themselves needed much instruction in regard to the destruction of the sputa, so as to lessen the danger of infecting others in the house. Even in well kept consumptive hospitals there was a little danger. He dealt with the difficulties connected with notification and registration and isolation. He had found it very difficult, even among his wealthy patients, to secure isolation and fresh air; and, of course, it was infinitely more difficult to secure such among the poorer classes. Special sanitaria, he maintained, should be provided, and in every instance where the patient waa not properly looked after at home, he should be sent to such places. Until such a time (for there are very few as yet), those cases should be reported where preventive

measures were not carried out thoroughly at home, as recommended by the patient's physician.

"The Prevention of Consumption" was the subject of a paper by J. F. MACDONALD, Nova Scotia. He advocated the bringing the matter of the contagiousness of this disease before the people by means of the secular press, by the establishment of philanthropic societies for the discussion of the matter and the adoption of practical measures for the treatment of the cases. He advised the system of registration; a careful system of disinfection; government inspection of infected places; the establishment of sanitaria, and the enactment of laws to prevent the infected from spreading the infection.

The subject of the President's address was "My experience and observation in the practice of medicine extending over half a century." The address dealt with the various diseases and their treatment common to an early settlement in the woods; of the various domestic remedies employed; of the difficulties and hardships of the practitioner; of the disappearance of the miasmatic diseases and murrain since the draining and clearing up of the country; and of the occurrence of certain of the specific germ diseases where it was difficult to see where the germs could come from, unless *de novo*, which he considered doubtful. The latter part of the paper was a discussion of the matter of inter-provincial registration, which he considered was one of the matters of reform it was in the power of this Association to bring about.

The President was accorded a hearty vote of thanks for his address, and a committee was appointed to consider the matter of reciprocity discussed in his address.

The following gentlemen were elected as the Nominating Committee: Drs. Hingston and Shepherd, of Montreal; I. H. Cameron and O'Reilly, of Toronto; Christie, Maclaren, Tobin, Dienstadt, Macleod and Johnson, of the Maritime Provinces.

Dr. F. J. SHEPHERD, of Montreal, gave an interesting report of a case of Interscapulo-Thoracic Amputation, the first, as far he knew, done in Canada. He described the technique of the operation. It was done for the removal of a chondro-sarcoma, involving the shoulder joint. The case was a complete success.

Dr. STEEVES, of St. John, reported having seen a case where a boy had had the whole of the upper limb torn from the body with recovery.

Dr. LAPTHORN SMITH'S demonstration of the Murphy Button, and his exhibition of Galvano-Cautery for using the street electric current, proved a very interesting feature of the programme. Dr. Smith showed how, at a very small cost, the electric current could be adapted for use in a surgeon's office. His enthusiasm over Murphy's button was not derived from his own experience with it, but from sheer admiration for the inventive genius of Dr. Murphy.

Dr. L. DUNCAN BULKLEY, of New York, gave a paper on the Treatment of Skin Diseases. More success would come to the general practitioner in the treatment of the skin if more attention was paid to each individual case. He advised careful enquiry into every detail of the patient's system and habits. The history of the eruption; careful enquiry as to former eruptions; family tendencies as to presence of asthma, rheumatism, etc.; all should be made a note of. If medical men knew eczema, acne and syphilis well, they would be able to treat the great majority of their cases satisfactorily. As to eczema, too much was often done—it was over treated often. More and more he had grown to know that much depended on constitutional treatment in all these skin affections. The correction of some fault in diet or habit in life was sufficient to effect relief. The doctor pointed out some of the principal points in the management of acne, syphilis, psoriasis and urticaria.

Dr. H. D. Hamilton, of Montreal, Dr. J. T. Steeves, of St. John, and Dr. K. N. Fenwick followed with interesting papers.

The usual votes of thanks were passed, and the Association adjourned to meet next year in Kingston.

THE MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, June 29th, 1894.

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

Dr. BELL presented the following specimens:

(1) A large concretion which he had recently removed from the bowel in a case of appendicitis. The patient was 47 years of age and had a bad history of recurrent attacks at intervals of three or four months for the last 21 years. The last attack occurred eight weeks before coming under observation, and it was then for the first time that he noticed any mass in the abdominal wall. This mass was in the situation of the appendix and about the size of a hen's egg, it was very hard and very clearly adherent to the abdominal wall, was quite tender to the touch, and on walking he suffered a dragging pain. Operation was advised and accepted by the patient and was carried out in the usual way. The incision was made to the inner side of the mass, which was then carefully dissected away from the abdominal wall to which it was attached by very firm adhesions. The free surfaces of the cæcum and the lower end of the ileum were found to be adherent and in the adhesions were enclosed in a hard mass and the base of the appendix. The free end of the appendix projected about an inch and a half. On separating the ileum and the cæcum it was found that the greater part of the dilated proximal end of the appendix had been absorbed (or destroyed by ulceration or gangrene), and that the concretion communicated with the lumen of the bowel on each side. The appendix and the concretion were removed and the two portions of bowel re-united by suture. The concretion, which was about the size of a horse-chestnut, had been submitted to Dr. Ruttan for chemical examination. The patient made an uninterrupted recovery. The case, Dr. Bell thought, was of interest as illustrating one of the unusual and complicated conditions one may meet with on operating for appendicitis.

(2) *Sarcoma of the Upper Third of the Tibia.*—The speci-

men had been removed that day from a girl 23 years old, with a tubercular history. The tumour was first noticed two and a half years ago, but emaciation had only become marked during the past eight months. The amputation was performed in the middle third of the thigh.

Chloroform Accident.—Dr. BELL next gave the history of a chloroform accident which occurred recently in his hospital practice, and which came very near adding one more victim to the fatalities of chloroform anæsthesia. On Thursday of last week a boy eight years old, suffering from caries of the lower dorsal vertebræ with psoas abscess, was prepared for operation. He had been in the hospital one month prior to this, during which time he appeared in good health, there was no fever, and with the exception of this spinal condition his organs were all sound. (Dr. Bell then read the report of the anæsthetist.)

Commenting on the report, the speaker remarked that it was impossible to say whether the pulse or respiration were the first to cease, as almost at the same moment that Dr. Shaw discovered the stoppage of the pulse, Dr. Davidson observed the respirations to cease with a long-drawn sigh. Inversion, artificial respiration, cold to the face, with hot cloths over the cardiac region were all resorted to, and it seemed minutes to the observers before any return of respiration or cardiac movements manifested themselves. He thought that this case demonstrated the fact that the heart does stop suddenly in chloroform poisoning, in some cases, at least, and that death is not always due to respiratory failure brought on by the administration of an excess of the drug. Had respiratory failure been the initial event here the heart, as in all cases of death from suspended respiration, such as drowning, hanging, choking, etc., would have gone on beating for some minutes, instead of stopping instantaneously as here. The converse, however, is not true; that is, respiration does not continue after an arrest of the heart's action; and considering these facts, it seems clear that in this case the effect of the chloroform was exercised on the heart primarily and solely, the stoppage of respiration being secondary to it. Moreover, the quantity of chloroform administered was too insignificant to

be capable of affecting the respiratory centres, as in less than half a minute before the accident the boy cried out "take it off my face," and only a few drops were given afterwards. An interesting feature in the case is that it contradicts the contention of the Hydrabad commission that the heart never stops first, but that death from chloroform is always the result of respiratory failure from not giving the drug properly.

Dr. SHEPHERD thought there must be two classes of cases in chloroform poisoning. He had a case last winter where he was operating for lupus of the face, in which chloroform was used, and in which the respirations stopped while the heart went on beating.

Dr. GORDON CAMPBELL believed that the preponderance of clinical evidence is in favor of the heart stopping first. He then wished to know if the boy was much alarmed. Dr. Bell replied in the negative, saying that he was exceptionally free from fear.

Dr. WESLEY MILLS said that most of the upholders of chloroform as an anæsthetic were simply blinded by their prejudices, and were incapable of seeing or believing any facts, no matter how well substantiated, detrimental to the reputation of this drug. He instanced the fact that Surgeon Major Laurie had quoted the report of the chloroform commission as being entirely in favor of his pet belief, while, in fact, it contradicted it. And such is the attitude of a majority of the defenders of chloroform who belong to what is known as the "Syme school," and to any experience establishing untoward effects their reply is simply "You do not give it properly, if you had done so the accident would not have happened."

Dr. GORDON CAMPBELL agreed with Dr. Mills in his strictures on the men of the "Syme school." He said they were accustomed to state that ether was only used by second-rate surgeons, and that it only effected incomplete anæsthesia.

The late Dr. Fenwick.—The following resolution was moved by Dr. SHEPHERD and seconded by Dr. MILLS:

Resolved—That this Society has learned with the most profound sorrow and regret of the death of Dr. George Edgeworth

Fenwick, one of its foundation members and a past president. For many years a most active and valued member, beside taking a prominent part in the discussions, he contributed numerous important papers to the proceedings and exhibited numbers of very valuable pathological specimens.

He was widely and favorably known, both in Canada and abroad, as a most accomplished, original and daring surgeon, who helped to advance surgical science in various directions, but especially in the surgery of the joints.

In Canadian medical literature he always upheld the best interests of the profession by protesting against abuses and advocating reform.

His kindly, genial manner and goodness of heart endeared him to all his brethren and especially made him the friend of the young practitioner.

Resolved—That our deepest sympathy be conveyed to his sorrowing family in this their time of mourning.

THE

Montreal Medical Journal.

VOL. XXIII. SEPTEMBER, 1894. No. 3.

FACULTY OF MEDICINE OF McGILL UNIVERSITY.

With the coming session a radical change is to be inaugurated. The length of the session is to be nine months instead of six as formerly. This gives thirty-six months as the actual duration of the medical course in future, against twenty-seven at present, for now one summer session is compulsory, as well as four winter sessions.

More time is thus given for lectures and practical courses of all sorts, and it is hoped that the student will be able to do more independent reading and thinking, and thus avoid the evil effects of cramming, which is inseparable from a short session.

Through the munificence of Mr. John H. R. Molson, a much needed addition to the building has been made. This connects the older buildings with the pathological building acquired last year, and contains a large lecture room and laboratories for the practical teaching of physiology, histology, pharmacology and sanitary science.

The old building has been greatly improved in many respects. The departments of anatomy and chemistry have been given more space, so that the crowding, so much complained of last session, will be done away with. Better facilities are also afforded for using the library by setting aside an adjoining apartment as a reading room for students.

The chairs of pathology and sanitary science are now endowed,

through the kindness of Sir Donald A. Smith, so that these most important branches are on a satisfactory basis.

The teaching staff has also been strengthened by the addition of several professors, assistant professors and demonstrators.

This hasty sketch will prove to our readers that McGill University is determined to maintain the position she has won, and that the prospects for her future were never brighter.

THE CANADIAN MEDICAL ASSOCIATION.

The meeting held at St. John passed off most successfully as will be seen by the report which we print elsewhere. The number of members in attendance was large, in fact but once in the history of the Association has it been surpassed, and that was three years ago when the meeting was held in Montreal.

The papers presented were numerous and the discussions on them animated, but the time was too short, for very little can be done in two days, especially in such a hospitable place as St. John, where the resident practitioners vied with one another in devising means to render the visit pleasant to their confreres.

The address of the president was an interesting account of his own experience, and was listened to with the attention that is always accorded to him.

The address in medicine brought up the important question whether the present system of education pursued in Canada is the best for our future citizens, both as to their present and future health and prosperity. This was referred to a committee for investigation and future report.

The subject of a central board for examination and registration was taken up and a report presented from the committee appointed at the last meeting. After some discussion a committee was struck to arrange some scheme as a basis for such a board, a scheme which will be agreeable to all the provinces concerned.

We congratulate the Association on the choice of the president for the coming year, Dr. Bayard, of St. John.

The next meeting will be at Kingston, Ont.

THE MONTREAL FLOWER MISSION.

This has been in existence since 1873, when fifteen young ladies met together and undertook to supply flowers to the Hospitals of the city, once a week. Subscriptions and donations of flowers were solicited from their friends, and so a beginning was made. Year after year this went on, and now, after twenty-one years, the mission may be said to have obtained its majority, and this year has been marked by a great extension of its work ; the opening of the Royal Victoria Hospital has doubled the number of patients, to whom every Saturday afternoon a small bouquet of flowers is presented.

The flowers are sent in by friends in the city who have gardens, and many come from the suburbs, and even long distances in the country. The school children collect wild flowers and send them, their parents rob their gardens of bloom, all that a breath of the country may be given to the sufferers in the Hospitals, many of whom have no friends to remember them, or if they have, poverty prevents any outlay in such a *useless* thing as flowers. The great railway companies of the Grand Trunk and Canadian Pacific also lend their aid by allowing baskets to be placed in their stations on Saturday mornings for the reception of flowers brought in from the surrounding summer resorts.

There is great rivalry between the two stations as to which shall have the greatest quantity of flowers to send to the mission, and the baskets are watched by the gate keepers with an eagle eye to prevent any pilfering or illegal appropriation of the blossoms placed in the receptacle under their charge. As an instance of this rivalry, the following printed slip was distributed on the trains of the Canadian Pacific Railway every Friday evening: " Don't forget the flower mission (for the hospitals). Please bring or send what flowers you can on Saturday morning for the C.P.R. basket."

For many years the ladies met every Saturday morning in Mr. Barnjum's gymnasium to receive the flowers and arrange the bouquets, but since his death the place of meeting has been the rooms of the Natural History Society, kindly loaned for the

purpose. Here people bring their offerings, and the great baskets are brought by a cabman from the stations. Volunteer workers labour all the morning arranging and tying up bunches of flowers which are put into trays containing water until the afternoon, when others come and take them to the Montreal General and Royal Victoria Hospitals and distribute them. If there are any flowers left after supplying these institutions they are taken to the Montreal Maternity Hospital, the Ladies' Benevolent Institution and St. Margaret's Home for Incurables, but we fear these last frequently go without, "For when they get there the cupboard is bare." If the funds warrant it, at Christmas and Easter flowers are purchased and given to the hospital patients, but unless some kind friend comes to the rescue with a liberal subscription, the display is not very great, for the field is large and both the subscribers and workers are few.

The management of the mission is very simple; the only officer is a secretary-treasurer, Miss Samuel, 39 Cote St. Antoine Road, and once a year a meeting is called of the subscribers, when a report of the previous year's work is presented.

Great numbers of flowers are sent in, but there is no danger of having too many, for the wards are large and the patients many, and besides the hospitals, there are other institutions which are glad to have bouquets to brighten up their rooms. No doubt many would become contributors to this work which has been done so well and so quietly did they but know of it, and our readers might bear this in mind and mention it to their friends and patients, for it is to the stranger from the country that the mission most appeals. The ladies who carry it on are truly endeavouring to carry out the divine injunction, "I was sick and ye visited me."

INSANITARY GRAVEYARDS.

A circular, of which we publish a translation, has been issued by the Provincial Board of Health and sent to the clergy of this Province. It reveals a condition of things that, to say the least, is deplorable, and is certainly a menace to public health. Besides, the law, which is by no means exacting in its demands,

is broken in the most flagrant manner. It is a disgrace to modern civilization, as well as christianity, that bodies should be covered by so little earth that the very dogs can dig them up and quarrel over the bones. Again the description of the private vaults is not pleasant reading; the floor covered with the decomposed drippings from the coffins, the coffins themselves burst open by the pressure within, forms a ghastly picture worthy of the brush of a Wiertz.

But these are dangers which are apparent to more than one of our senses and can easily be avoided, but far different is it with the other grounds of complaint. The taking of bodies of persons who have died with contagious diseases into churches, interment in the churches and contamination of the water supply are more subtle dangers, for the microbe of disease is invisible and cannot be easily avoided. Churches are buildings which are frequented, of necessity, by many people, and clergymen incur a grave responsibility in allowing the continuance of these abuses which bring disease and death upon their parishioners. Ignorance is probably at the bottom of much of it, the dangers are not really understood, but then the question naturally arises, why are not lectures on hygiene and public health given in our theological schools? The clergy have great power in these matters; they have control of the graveyards, and that they lack teaching in this essential department is a thing that should not be allowed to go on.

The law on the subject is not as stringent as it might be and as we hope it will be made before long, but there is no excuse for not carrying out its provisions, which is the least that should be done.

BOARD OF HEALTH OF THE PROVINCE OF QUEBEC,

76 St. Gabriel Street, Montreal, 9th May, 1894.

REVEREND SIRS,—I am instructed by the Board of Health to draw your attention to a state of things most deplorable from a sanitary point of view, as well as, in some cases, contrary to decency.

The complaints that are received, only too frequently, on these matters are generally on the following points:

1st. Insufficient depth of the graves.

2nd. Insanitary interment of bodies in private vaults.

3rd. Bodies of persons who have died of contagious diseases being interred in public or private vaults.
4th. Situation of cemeteries in the centre of villages.
5th. Interment in the churches.
6th. Use of the vaults of churches as dead houses during winter.

1st. *Insufficient depth of the graves.*—Although the law requires that all coffins shall be covered by at least three feet of earth, it is ascertained beyond a doubt that frequently only 20 to 25 inches of earth are put over the coffin, and that, in a large number of cases, principally in the older parishes, where new coffins are placed on top of the old ones, the thickness of earth does not exceed 8, 6, or even sometimes 4 inches. This has been the case even in the burial of bodies dying from contagious diseases.

As a consequence of this state of things, when the coffins come to break up, the earth with which they are covered is not sufficient to entirely cover up the remains, so that the bodies, or the remnants, are exposed to view and decomposition is continued in the open air. It has been asserted that in some places the bones thus exposed have been carried away by dogs to some distance.

2nd. *Insanitary interments of bodies in private vaults.*—To have a private vault appears to have become synonmous with "compelling the public to be present at the decomposition of one's relatives." The coffins in private vaults are usually placed on trestles or on shelves, on the floor or on the ground. Decomposition in going on causes deleterious and mephitic gases to spread themselves freely in the vault where they become condensed, and moreover the coffins, the trestles, the floor and the earth becomes covered with the gross and infected liquids escaping from the coffins.

Although this mode of burial is the one which is the most dangerous from a sanitary point of view, it is the one, nevertheless, chosen generally in preference by the class of persons in easy circumstances, who pretend that they find consolation in from time to time visiting the spot where this unwholesome, not to say disgusting, spectacle is being enacted.

It is a mistake to think that the use of metallic coffins prevents these diseases, as these coffins soon give way under the pressure of the gases, and once they are burst open, they are of less value than even wooden ones.

3rd. *Bodies of persons who have died of contagious diseases being interred in public or private vaults.*—This custom, which is moreover contrary to law, causes, without desiring it and without knowing it, parties who may follow to the public or private vault the body of a person dying of a non-contagious disease, to find themselves brought into immediate contact with bodies who have died of contagious diseases and to thus expose themselves to contract or to carry to their families the germs of a disease often fatal.

4th. *Situation of cemeteries in the centre of villages.*—To have the cemetery in the middle of the village is to have constantly, in the midst of a dense population, a source of infection, as the atmosphere, in the

vicinity of a cemetery, is always vitiated by the gas arising from the decomposition of the dead bodies. Moreover, these cemeteries are too frequently situated near the wells, the streams, or the springs whence water is drawn for household purposes.

In many places again cemeteries are seen surrounding the church where all the water of the springtime and the water in heavy rain-falls which filter through the earth of the cemetery, find easy entrance into the vaults under the church, lying, as they do, at a lower level than the ground above.

In many old parishes where they are anxious, by all possible means, to keep the cemetery close by the church, they use every means that their ingenuity can suggest, to enlarge it, either on the surface by the annexation of new land on the outskirts, or else in the height by the construction of a wall all around and filling up with earth carried in, and all these changes, wrought at considerable expense, in no way improve the sanitary condition of the cemetery, and do not decrease the dangers of its bad situation.

5th. *Interment in the churches.*—If cemeteries should be removed from the middle of the village, there is still stronger reason why they should not be placed underneath the churches.

Moreover that would be tolerating in churches what no one would think of enduring in their own dwelling house. Nevertheless, if one or two families did inter their deceased friends in the cellar of their own houses, it would be only one or two households that would suffer from it, whereas when the deceased of these two families are buried in the vaults of the church the whole of the parishioners suffer alike. These interments result in poisoning the air of the churches; as, especially in winter when all the openings are hermetically closed, and the body of the church is warmed, the air is therein renewed mainly from that of the vaults that the ventilation draws up into the upper portion of the edifice.

6th. *Use of the vaults of churches as dead-houses during winter.*—Happily this is of tolerably rare occurrence, but we are nevertheless in possession of facts of serious import. Only recently, we have been informed, that in the course of last winter over 50 dead bodies were allowed to accumulate in part of the vaults of a church close to Montreal.

In order to gain a better understanding of the gravity, as well as the inconsistency of such a custom, suffice it to say, that if, in the parish in question, instead of using the church for that purpose, the families had each kept the dead bodies of their friends in the cellars of their own residences and only transported them to the cemetery in the spring, that would have been a vast improvement. Those families alone, and not the whole parish, would have been the sufferers. These remarks apply with equal force, and for the same reasons to the vaults under the vestry and to those of the steeples of the church.

In bringing before your notice the foregoing facts, the Board trusts that you will kindly give it your co-operation in order to apply the remedy, and in the furtherance of this object, it would respectfully

suggest calling your churchwardens to deliberate on these matters over which you will yourself preside :

1st. That in not insisting upon the coffins being covered with three feet of earth, the vestry is committing an infraction of the law relating to interments ;

2nd. (*a.*) That until this insanitary law which "permits a body "enclosed in a hermetically sealed metallic coffin to be laid on trestles" is repealed and replaced by a provision which exacts that every dead body, placed in a private vault, shall be buried or walled up, it is the duty of all vestries to superintend the vaults, and, at the slightest sign, indicating that a metallic coffin has burst open under the pressure of the gases, to order that the coffin, with its contents, shall be immediately placed in another hermetically sealed, unless the family consents to have the broken coffin suitably interred or walled up ;

(*b.*) That, according to law, metallic coffins alone can be placed upon trestles or upon shelves ;

3rd. That the interment law forbids to place, either in private or public vaults, the bodies of those persons who have died of contagious diseases, and orders that all such bodies should be immediately interred.

4th. (*a.*) That the site of a cemetery should be beyond the limits of the village, and moreover inclining in a direction opposite to the site of the dwellings below the village if this is situated on the edge of a river or stream of water, so that the water for household purposes should not be contaminated by underground filterings. The land chosen for this purpose should be, as far as possible, elevated, dry and very porous ; in other words, it ought to drain easily, and to permit free circulation of air, which is an essential condition to promote the rapid decomposition of dead bodies.

(*b.*) That no enlargement of a cemetery situated in the centre of a village should, under any circumstances, be ever contemplated, as the dangers that these cemeteries offer are in a direct ratio to the number of bodies buried in them.

5th. That in future interments in churches should never be tolerated, as it should not be permitted to the vestries, under any pretence whatever, to render unhealthy a building that no one can exempt himself from frquenting.

6th. That the interment law requires that every dead body deposited in a church shall be either interred four feet below the ground or built in with masonry.

Trusting that you will yield to the wishes of this Board and will lend it the co-operation which it asks at your hands in the interest of the health of your parishioners.

I have the honour to be,

Your very respectful servant,

(Signed,) ELZÉAR PELLETIER,

Secretary.

P.S.—The three modes of burial in private vaults, hereinafter prescribed, are the ONLY ONES that the Board of Health can recommend :

1st. To deposit the coffin in a grave and to cover it with four feet of earth.

2nd. To confine the coffin in solid masonry of at least twelve inches of thickness, if the work is of stone ; or of at least eighteen inches if the work is in brick, the stone or brick being thoroughly cemented.

3rd. To surround the coffin, on all sides, with a coat of cement four inches thick.

To this end, a niche is built in such a way that the interior measures on its length, breadth and height. eight inches more than the coffin which it is to hold. The walls of the niche should be in burnt brick, well cemented, and be four inches in thickness. The ground work of the niches of the lower row is to be in cemented brick, as above, or in mortar. The coffin is deposited in a niche of this construction, upon four blocks of stone, each four inches in height, so as to leave a free space of four inches on all sides ; there only then remains to fill up the niche with cement to the height of the partition wall.

Public Health.

From the report of the Section of Public Medicine of the British Medical Association in the *British Medical Journal* we take the following:

Dr. Arnold Evans (Bradford, Yorkshire), in a paper, gave it as his opinion that the infection of small-pox could be conveyed through the air, and based this opinion on his observations at the small-pox hospital at Bradford during the late epidemic. The number of cases occurring in the immediate vicinity of the hospital was greater than could be accounted for by accidental carrying of infection from it or of contagion from previous cases. Again, the greatest number of cases occurred in the direction of the prevailing winds.

A temporary small-pox hospital which had been erected was burnt, and although none of the spectators were allowed within fifty yards of the fire, a number of them developed the disease a short time afterwards.

Dr. Evans sums up by saying: "Taking all things into consideration, it seems to me that the most likely manner to account for the extensive prevalence of small-pox over the special area is that the poison was conveyed aërially direct from the wards of the hospital."

He also gives tables showing the respective prevalence of small-pox within certain distances from the hospital.

In the discussion which followed, Dr. Slade King (Ilfracombe) mentioned an instance which bore out Dr. Evans' theory. At Crediton small-pox broke out and the patients were isolated in tents erected for the purpose in a field. Some boys seeing the tents supposed that the soldiers had gone into camp, as was customary, and they ran down to see the sights. They did not go near the tents, but played for some time in a field at a little distance. The wind was blowing from the tents towards them. Twenty-five cases occurred among these boys during the next fortnight.

Mr. Walsh, M.B. (London), gave the results of some experiments conducted by Dr. Waldo (Southwark) and himself to decide whether baking sterilizes a loaf or not. Their experiments dealt only with non-pathogenic organisms, but the main conclusion arrived at was that the baking does not of a necessity kill the organisms. They found that the temperature in the centre of a quartern loaf varied from 163.4° to 186° F. and in a half-quartern from 186.8° to 203° F. As the heat within the loaf increases until the maximum is reached, it follows that the germs are only exposed for a short time to the maximum heat.

The experiments are to be continued, and the speaker said that he suspected that many sporadic outbreaks of disease, such as diarrhœa, could be traced to bread improperly made—made from mouldy, sour flour, or made in insanitary bake-houses.

The Interpretation of Water Analyses.

J. C. Thresh, D.Sc., M.B. (M. O. H. Essex County Council), in speaking of the "Interpretation of Water Analyses," said:

Of the numerous substances found in potable waters, it is now generally admitted that only those of organic origin are a serious source of danger, and that by far the greatest risk is incurred in using water liable to contain certain living organisms, which, when introduced into the system, are capable of producing specific disease. Of the presence or absence of such organisms, chemical analysis can give us no information. The presence of organic matter may be chemically demonstrated, but, inasmuch as its nature, whether poisonous or innocuous, is beyond the power of the analyst to reveal, it is obvious that a mere chemical analysis may often be worthless or even misleading. This point cannot be too strongly emphasized, since the popular impression that the chemist, by performing a few mysterious experiments with a water in his laboratory, can pronounce at once whether it is pure or impure, safe or dangerous, is shared alike by the ignorant and the learned, and must be dispelled. This opinion has been, and continues to be, fostered

by analysts, who rarely hesitate to pass judgment upon a water from the determination of the chlorides, nitrates, phosphates and ammonia, of the organic carbon and nitrogen, of the oxygen consumed, and of the ammonia derivable from the organic constituents. All these factors are of more or less importance as an index of the degree of pollution, recent or remote, but their real value can in very few cases be assessed without some previous knowledge of the source of the water. The inorganic constituents can easily be determined, and whether, either in quality or quantity, they are objectionable, the chemist may safely express an opinion. They are, therefore, chiefly of interest to us in so far as their presence tends to throw light upon the source of the organic matter, which in greater or lesser quantity is always present. Only under certain circumstances has the determination of chlorides any significance, and pure water from some sources may contain a larger amount of chlorides than the same water when contaminated. The importance of an estimation of nitrates was for a long time undervalued. At the present time the tendency is to greatly exaggerate it. The amount of nitrates which would condemn a water from one source may be absolutely without significance in a water from another. At certain schools it is taught that the presence of nitrites is conclusive evidence of the dangerous character of a water, yet these compounds may be derived from the most innocent sources, as by the reduction of nitrates by metals, cement, new brickwork, etc. Erroneous conclusions may also be drawn from the determination of phosphates, free oxygen, ammonia and albuminoid ammonia. In the table of analyses (exhibited but not reproduced) the erroneous conclusions which may be deduced from a too great dependence upon analytical data are fully exemplified. The table is compiled from reports of the medical inspectors of the Local Government Board, from the results of analyses made by well-known chemists, and from my own report books. In nearly every instance chemical analyses failed to find such evidence of pollution as would justify the analyst in condemning the water, yet these very waters were proved to have caused more or less serious outbreaks of disease. Although a mere

chemical examination cannot guarantee that a water is pure and can be used without risk, yet it can very frequently reveal to us impurity and danger. Chemical analysis, therefore, has its use; it is only when it is made the sole arbiter between safety and risk that it is abused and is liable to lead to errors fraught with most disastrous consequences. Let the analysis be as carefully made and as complete as possible, but let the results always be interpreted in the light afforded by a searching examination of the source of the sample. Let all so-called standards be abandoned as absurd, and let the opinion as to whether a water is dangerous or safe be based upon a full consideration of other more important factors. With the discovery of the fact that such diseases as typhoid fever and cholera are due to the introduction into the system, not of dead organic matter, but of living organisms. faith in the chemical analysis of water began to be shaken. When, still more recently, the actual microbes causing these diseases had been identified, and processes had been devised for isolating them from the multitude of other organisms found in water, it seemed as though the examination of water for sanitary purposes had passed from the domain of the chemist into that of the bacteriologist. Further experience, however, is teaching us that the results of bacteriological examinations may be as misleading as those of chemical analyses. The cholera bacilus could not be demonstrated in the water poisoning the inhabitants of Hamburg and Altona; neither could the typhoid bacillus be found in the water supply which last year produced the epidemic in Worthing. Koch even falls back on a standard of quantity, which is as illogical as the older chemical standards. Both depend upon quantity when the real point at issue is the quality. In reputedly good waters it has been observed that the micro-organisms present, capable of liquefying gelatine by their growth, are few in number, whilst in sewage polluted water they abound. But this fact is of little value, since it only enables somewhat gross pollution to be detected, and most of these liquefying organisms are perfectly harmless. Bacteriology, like chemistry, may tell us something of impurity and hazard, but neither can be depended upon to

determine with certainty whether a water is actually injurious to health. The possibility of occasional pollution is a point too often overlooked, yet it is to such accidental pollution that outbreaks of disease are most frequently attributed, and of the liability to this the examination of samples of water, prior to the occurrence of the contamination, may tell us little or nothing. The danger of such pollution does not, unfortunately, vary with the amount of any constituent found in the water, and a source yielding a water of great chemical and bacterial purity may be more liable to occassional fouling than a source yielding water containing excessive quantities of chlorides and nitrates, unoxidized organic matter, or even living organisms. Bacteriological and microscopical examinations, as well as chemical analyses, must therefore always be associated with a thorough investigation of the source of the water to determine the possibility of contamination, continuous or intermittent, and a guardedly-expressed opinion given only after a full consideration of the bearing of the one upon the other. When a water is known to be fouled by sewage, or known to be liable to such pollution, any form of examination is superfluous, and as neither bacteriology nor chemistry can be depended upon to prove that a water is free from all dangerous pollution, such examinations are, in many cases, quite useless.

Extracts from the Revised Statutes of the Province of Quebec.

3459. Under a penalty of twenty dollars, upon every person in any way concerned or assisting, or taking part in, or being knowingly present at such interment, no deceased person shall be interred until after the expiration of twenty-four hours at least from the death of such person.

3461. In every interment in a church the coffin shall be covered by at least four feet of earth, or incased in masonry of at least eighteen inches in thickness, if in stone, or of at least twenty inches in thickness, if in brick; both brick and stone having been well covered with cement.

3462. In every interment in a church the use of disinfectants in the coffin is required.

3463. In all cases of death from small-pox, Asiatic cholera, typhus, typhoid fever, scarlet fever, diphtheria, glanders or measles, the use of disinfectants in the coffin is also required.

3464. The body of no person, who has died from any of the diseases mentioned in the preceding article, shall be conveyed from one parish to another, unless it be enclosed in a metallic coffin, hermetically sealed, and filled with disinfectants.

3465. The bodies of all persons who have died of any of the diseases specified in article 3463 shall be laid in separate graves and covered with at least four feet of earth, and shall not be deposited in a vault or buried in any church.

This article is amended 52 V., c. 36, sec. 1, by the following addition: 3465a. But whenever death was not caused by any of the diseasss mentioned in article 3463, the coffin shall be covered by at least three feet of earth.

3466. No interment is allowed in private vaults, unless the coffin be deposited in a grave and covered with four feet of earth, or incased in masonry of at least eighteen inches in thickness if of stone, or at least twenty inches in thickness if in brick; both brick and stone being well covered with cement, whatever the disease may have been.

52 Vict., c. 32, sec. 2. Article 3466 of the Revised Statutes is replaced by the following: 3466. No interment is allowed in private vaults, unless, whatever may have been the disease which caused the death, the coffin be deposited in a grave and covered with four feet of earth, or incased in masonry of at least twelve inches in thickness if in stone, or of at least eighteen inches in thickness if in brick; both stone and brick being well covered with mortar.

The coffin may also be placed on shelves or trestles in vaults, provided that the body be placed in a metal coffin hermetically sealed.

3467. When typhus, Asiatic cholera, etc., ... are epidemic, it shall be lawful for the Provincial Board of Health ..... to prohibit by proclamation, during a fixed period specified in the proclamation, the bodies of persons who have died from any such diseases from being brought into churches .....

While such prohibition is not in force, the bodies of persons who have died of such diseases shall be conveyed directly from the house to the place of interment.

2468. In the absence of such proclamation, the local or diocesan ecclesiastical authority may, at any time, forbid the bringing of corpses into the churches under the control of such ecclesiastical authority, when it deems that the bringing of such corpses into the churches may be prejudicial to the public health.

3472. In any new parish the site for the cemetery shall be chosen, as much as possible, beyond the probable limits of the town or village, on elevated land inclining in a direction opposite to the site of the dwellings, so that drinking water shall not be contaminated by its drainage.

The same rule shall also be applied in parishes already established where a removal of the cemetery is to be made.

3476. The superior or diocesan ecclesiastical authority may, whenever deemed desirable in the interests of decency or of the public health, prohibit interments in any cemetery or church under its control.

Medical Items.

SHORTHAND IN MEDICINE.—In order to promote the use of shorthand by medical students and practitioners, by enabling them to increase their knowledge at the same time of the art and of their profession, a small sheet of clinical teaching in lithographed phonetic shorthand has been issued by a London firm. The paper, which will be continued if found to fill a need, contains reports of clinical lectures by Dr. Gowers, and other prominent London clinicians.

—Prof. Peter, of Paris, who died lately, at the age of sixty-nine years, presented in his career an illustration of how ability and perseverance, even in spite of unusual difficulties, can acquire greatness. In his early days he was a type-setter. He was thirty-five years old when he obtained his medical degree, and it was not until he was well in his fifties that he became a professor. And yet he lived long enough to have a French paper say of him :— "The hospitals have lost their greatest clinician."

FAILURE TO DIAGNOSE SMALL-POX.—Apropos of the burning question of the spread of disease by vagrants, a somewhat curious case of mistaken diagnosis in a tramp is recorded in the columns of the *Western Morning News*, the person having tramped through several unions with the infection of small-pox. The patient thought he was suffering from an attack of itch ; and, more striking still, he seems to have been treated at one place for ulcer of the cornea, the supposed ulcer being a pock mark. Dr. Elliott, of Kingsbridge, has traced the movements of the man for thirteen days preceding his reception into the workhouse in that town, with the result that he is found to have passed through ten towns in that period.—*British Medical Journal.*

A CASE OF AMNESIA.—The guardians of the peace in Paris, the other evening, found a man asleep upon a bench in the "Quai des Tournelles." They aroused him and told him to go home. "Go home," said he, "it is strange, but I cannot remember where I live. He was taken to the station but could give no information about himself. On searching him, however, papers were found which showed that his name was Pierre Voulupt, and that he came from Besançon. Next morning, thanks to the list of lodging houses, it was found that he had arrived in Paris on the first of May, put up at a hotel in Maitre-Albert street and disappeared the next day, leaving eight hundred francs in the care of the proprietor. Pierre was then taken back to his lodgings.—*Lyon Médicale, July 8th, 1894.*

—In a little village, Schwanheim, near Frankfort a. Nl., occurred an epidemic of hysteria lately, causing considerable consternation and excitement among the citizens. Two young girls awoke one morning and found that their hair had been cut close to the scalp. They related that a person had come into their room during the night and that he had cut their hair. Several girls experienced the same thing, and finally a young woman, who was to be married the next day, lost her hair. Some of the citizens volunteered to watch over the houses of young women. These citizens received anonymous letters that their whiskers would be cut. On the door of one of the public buildings was found the following inscription :

Wir sind unser dreissig,
Bei Nacht sind wir fleissig,
Bei Tag schauen wir zum Fenster Ninaus,
Und lachen die Leut' aus ;
Jetst schneiden wir Zöpf ab,
Später schneiden wir Köpf' ab.

It was later explained, of course, that the hair had been cut by the girls themselves.—*Ugeskrift F. Lgœer.* No. 19, 1894.

—According to the *Texas Medical Journal*, it is beginning to look as if the National Association of Railway Surgeons is to be a kind of kindergarten for the education of witnesses.

—An English physician recently entered an action against a patient for slander and gained the case, a reversal of the usual process.

—It is announced that Dr. John Williams, of London, who attended the Duchess of York in her recent confinement, has been made a baronet.

—A convalescent home for nurses has recently been founded in Glasgow. Dr. S. G. Moore bequeathed £55,000 to build and endow it.

—The North Carolina Board of Examiners have suggested a good scheme to prevent complaints about the fairness of the examination being made by unsuccessful candidates They propose in such a case, to publish the questions together with the written answers of the complainant.

—To avoid the chilling of patients during long operations, an electrician has invented a mattrass, called a thennogen, containing a mesh of fine wires, which become heated by the passage of an electric current. The amount of heat can be regulated by a special apparatus. By this means the ordinary methods of hot water bottles, hot blankets, &c., are done away with.

KENTUCKY SCHOOL OF MEDICINE.—At the meeting of the Association of American Medical Colleges, held in San Francisco on June 7th, 1894, the Kentucky School of Medicine, of Louisville, Ky., was dropped from membership in the association.—*Ex.* Dr. Wathen, the Dean of the Kentucky School of Medicine, denies, emphatically, that his school was ever a member of the Association of American Medical Colleges It is a member of the Southern Association in good standing, and no school in this country is more strict in its requirements, nor possesses a higher standard of excellence. The Kentucky School of Medicine is one of the oldest and best known institutions in the South, and its requirements, both for matriculation and graduation, are higher than are those of either the Southern or American Associations. The Faculty has just completed a large hospital annex, and the clinical advantages the coming season will be equal to any, and superior to most, other colleges.—*Louisville Medical Monthly.*

—Mr. Albert Turner, who has been for nearly thirty years connected with the Fowler & Wells Company, is announced as the manager of a new Journal of Practical Hygiene to be called *Health* for which well known writers on the subject will contribute. The announcement for July number contains the names of Dr. Oswald, Dr. C. E. Page, Dr. Dodds, Julia Coleman, Hester M. Poole, Dr. W. R. Forest, Mrs. Le Favre, M. Poole, Miss E. Marguerite Lindley, Mrs. Hudders, Dr. Fuller, Helen Gilbert Ecob and others. To be issued as a quarterly at 15 cts. a number, or 50 cts. a year by the Health Publishing Co., 88 Reade Street, New York.

INOCULATION OF A RAT WITH CANCER FROM A MAN.—Mayet (*Lyon Médical*, Aug. 27, 1893,) reports a case in which he inoculated a rat with the juice of a cancer. The juice was diluted with glycerine and filtered through filter paper, and the rat was injected three times by means of a hypodermic syringe. The rat was shown eleven months after the injection and then had two tumors in the loins. Mr. Vialleton had pronounced them carcinoma.

In reply to a question, M. Mayet said that he considered cancer a disease which affected various types according to the seat of the proliferation, and he thought that, no matter what form of cancer was used for inoculation, the histologieal characters of the resulting tumour would depend on the tissue in which it developed. The case was presented at the Société de Science Médicale de Lyon.

THE FIRST LADY GRADUATES OF GLASGOW UNIVERSITY.—The results of the final examinations for degrees in medicine and surgery in Glasgow University were made known at the end of last week. The candidates numbered 135, of whom 69 passed in all subjects, and 30 in all but one. Of the 30, 21 were referred for three months in surgery. There were 8 withdrawals and 28 rejections. Of the candidates 4 were ladies, of whom 2 passed in all subjects, and 2 in all but surgery. The graduation took place on July 19th, among the graduands being the two ladies mentioned. These ladies have the unique distinction of being the first lady grad-

uates of this more than three centuries old University, and their names ought to be recorded. They are Miss Marion Gilchrist, of Bothwell, and Miss Alice L. L. Cumming, daughter of Dr. Cumming, of Blythswood Square. Both are students of Queen Margaret College, Glasgow, where each took a preliminary training in Arts before entering on her medical studies. Miss Gilchrist is an LL.A., of St. Andrew's, and has the additional honour of graduating with high commendation. Queen Margaret College has reason to be proud of her first University candidates.

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Subscription price, including postage, $2.00 per annum, in advance. Single copies, 25c.

The volume commences with the July number, but subscriptions may begin at any time.

Address

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Care of GAZETTE PRINTING CO.,
MONTREAL

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXIII. OCTOBER, 1894. No. 4.

Original Communications.

ADDRESS OF THE PRESIDENT OF THE AMERICAN PUBLIC HEALTH ASSOCIATION.*

E. PERSILLIER LACHAPELLE, M.D.

It is not without a legitimate feeling of uneasiness that I rise on this important occasion to address you in a tongue that is somewhat strange to me. I avow that the dictates of duty would scarcely be powerful enough to develop sufficient courage were I not assured previously of your benevolence and lenity. Encouraged by this reliance upon your indulgence, I shall proceed, and, by being as short as possible, I hope to merit your good-will.

The American Public Health Association, since its foundation, now twenty-two years ago, ever true to its mission, has never ceased to labour for the advancement of sanitary science—for the promotion of measures and organizations that should effect the practical accomplishment of the laws and principles of public hygiene. It has thus realized the brightest hopes and most enthusiastic provisions of its worthy founders, and has extended its benefits and influence over the whole of North America; to-day it embraces the three great countries that form this vast continent: the United States of America, the Republic of Mexico, and the Dominion of Canada, all three working together in brotherly emulation, recognizing no political boundaries, and valiantly striving to attain one unique and

* Read before the American Public Health Association at Montreal, Sept., 1894.

humane object: the dissemination to all of the knowledge of public hygiene and the development of respect for its decrees.

It is, therefore, fellow-members of the Association, with the greatest pleasure—after having taken part in our former meetings in the principal cities of the United States and Mexico, reaped precious knowledge and borne away happy remembrances—that I see us all to-day congregated in this city, the commercial metropolis of our Canada. I know we shall be pleased to again find ourselves united, not only to strengthen the bonds of friendship formed in preceding meetings, but also to communicate to one another the fruits of recently acquired experience and knowledge, each contributing his mite to help the progress of hygiene among our people and so continue the good work of the Association.

Every year the Association changes its places of meeting, and this for good reasons. The spirit of its founders being to establish, above all, a body for the diffusion and popularization of public sanitary science, this object could not be better attained than by extending to its greatest limits the influence of the Association; and for this purpose no surer means could be found than this bringing together of its distinguished members in different distant cities. There they are allowed to see and judge for themselves of the wants and progress of the different parts of the continent; their experience is enriched, they compare observations and suggest new ideas. Again, by adopting this method of meeting, the same members are not continually called upon to displace themselves, which would often entail considerable sacrifices.

On the one hand, not only do the members themselves derive considerable profit from such changes, but, on the other hand, and above all, those congresses in various parts of the continent immensely facilitate the propagation of our science to the public, by awakening, as they do, general interest wherever they are held; they help to dissipate erroneous ideas and prejudice by giving publicity to the unbiased opinions of a large number of enlightened and disinterested men on local questions; they are of great assistance to governments by having those import-

ant questions solved according to the requirements of each country; they give the authorities strength, confidence and courage to put into practice much needed measures; they even force them to act. Schools, universities, local boards of health, municipal authorities and others feel the stimulus imparted and labour on with fresh and invigorating impetus.

Judging, as I do, from what has occurred elsewhere, I feel convinced that Montreal, and the Province in general, will reap much benefit from this learned and important congress. Wherever the Assooiation has met it has stimulated and guided the march of progress, and it is becoming more and more respected and honoured by the grateful public, for it ever leaves behind it tangible and irrevocable proofs of the good work it propagates.

Ladies and gentlemen—Hygiene is no longer the patrimony of physicians exclusively; it is a science open to all, laymen and clergymen, men and women. It needs supporters and workers in all classes—engineers, architects, teachers, chemists, etc., etc. In a word, it appeals to all who are competent to aid its progress.

This universality of sanitary science has been productive of the most brilliant results; to it, we owe the greatest part of recent progress. What would hygiene be, to-day, bereft of the admirable discoveries of a layman, the illustrious Pasteur?—that light of modern science who has created such a revolution in our knowledge of the true cause of contagious diseases, and their modes of spreading; who has been the forerunner and inciter of all our modern effective methods of prevention and treatment of these scourges and is the real father of actual antiseptic medicine.

All cannot be Pasteurs, but all can work. Every one should contribute a mite of help or knowledge, thus securing universal interest and co-operation. There should be perfect solidarity as to individuals and nations, with regard to public hygiene.

Contagious diseases and epidemics respect no political frontiers; it therefore requires union and a common interest to effectually put a check to their invasion and extension.

The recognition of this fact relating more directly to adjoining countries, has caused our Association, originally founded in the United States, to gradually extend and naturally embrace the three contiguous countries which form North America and whose sanitary interests are identical. It is for this reason again, that it holds its annual meetings in divers sections of the continent, appealing to and bringing together in one harmonious family all the sanitarians of North America, to submit to their careful study health problems which interest them all.

Herein lies the explanation of the immense progress accomplished on this continent during the last twenty years.

Judicious and scientific quarantine has been established in all quarters ; state, provincial and local boards of health have become generalized, and have adopted wise and important sanitary measures and regulations.

Public opinion has been converted ; popular prejudice giving way to unwavering confidence. Governments have thus been enabled, without risking their often precarious existence, to cause important decrees of hygiene to be sanctioned by parliaments, and to have the necessary funds voted to permit of their being put into practice. Hygiene having thus drawn their attention, they begin to understand the necessity of strenuous means being employed to assure its advancement, and they realize the fact, that instead of being detrimental to public commercial interests, sanitary measures favour their growth by protecting the country from disease. They recognize, to-day, that the money and labour spent in upholding sanitary principles are repaid manifold by the security afforded to public health, a more continuous and active trade being thus assured.

May we not hope, that governments, fully realizing the importance of these questions and wishing to afford greater facilities for protection, will soon see the necessity of creating a new department in their cabinets :—that of Public Health ; and that, in the near future, all governments will be advised and supported by a competent specialist—a minister of Public Health ? We can easily forsee all the good that will arise from the creation of such a position.

Ladies and Gentlemen,—Although it is encouraging and pleasing to note the progress realized, the success obtained, we must not believe the task is done, and that all obstacles have vanished. For instance, the adoption of measures requisite to put into practice the solution of a question of sanitation, collides with two great and serious obstacles; expenditure and personal interests. Such is the case when measures for quarantine, isolation, disinfection, the cleansing of towns and seaports, the prohibition of adulterated food, etc., are put into force.

Quarantine, so needful to protect against the invasion of exotic epidemic diseases, is no longer, thanks to the progress of hygiene, what it was formerly; detention is shorter, I may say, practically suppressed by our modern methods of effective disinfection; but, nevertheless, even the slightest delay in the unloading of a ship begets expense, and brings constraint on personal interests.

I might say the same of the other measures mentioned; each calls for expenditure of money, time and labour, and is sure to affect the interests of some one.

In this way, opposition is brought to bear on the introduction of would-be effectual means of protection, by persons who are really wronged, or believe themselves so. On the other hand, these for whom protection is sought, are mostly indifferent to the labour and worry that is expended for their safety.

It is not surprising, then, that governments and parliaments should often hesitate, and frequently withdraw their support. On one side, they have small reason and light pressure to act; on the other, great influence is thrust forward to make them desist.

What is here needed to insure success is the voice of authoritative knowledge and teaching; and congresses of sanitary science, such as this one, composed as they are of eminent and influential men, can alone furnish cogent authority.

To the pretensions of interested individuals who often, in an exaggerated manner, plead expense and trespass on their private affairs, and to the hesitating, faltering governments that listen to those reclamations and are made to doubt the utility,

efficacy, even urgency, of the requested measures, we can oppose the authority of decisions rendered on those questions by the most authorized and disinterested sanitarians of various countries ; such decisions having been formed in open convention, after serious study and discussion, possess a value and respect which cannot easily be ignored or set aside. We have the hope, therefore, of seeing governments ignore the opposition of the one and the apathy of the others to accede to our humane demands.

Such have been the cares and tendencies of our Association since its foundation, and we may state with pride that the results obtained so far, in all directions, are an encouragement to labour on earnestly and vigorously for the achievement of the task that is left to be accomplished. May the success of the future even exceed that of the past !

To fulfil the spirit of our annual meetings, we must then choose questions that require the most immediate decision, study them fully, discuss them attentively, and try to effect a solution of them based on the experience of other countries and on the most recent decrees of modern science. We must bear in mind that ours is a science of application, whose problems may differ according to localities and circumstances ; and that, it thus belongs to each state and province to choose questions, and accept solutions most in accordance with local customs, climate and legislation.

We shall thus have to consider particularly exotic epidemic diseases and communicable affections of local origin in order to discover the most efficient means of protection against invasion by the one, and against the development and spread of the others.

Ladies and Gentlemen,—The protection against exotic contagious diseases is based on two theories, each having its staunch supporters.

According to the one, epidemics are due to, or are maintained by the unhealthiness of the soil ; to insure its permanent salubrity is therefore the best means of preventing and suppressing epidemics. England has supported this doctrine, and

spent over a thousand millions in cleansing and purifying its sea-ports.

According to the other, the real danger lies in the importation of the morbid germs ; therefore, protection is sought in the efforts to prevent their introduction along sea-boards and frontiers, or, in other words, in the establishing of an effective quarantine service.

These two doctrines may be equally true, but separately they are not complete. To secure real protection in accordance with the requirements of modern science, of commerce, and of the financial standing of a country, a just medium has to be adopted by a combination of the two doctrines. What has been possible and successful in England, owing to the small extent of coast and land, and to the isolated position of the country, cannot be so in other localities ; a long coast-line, a large surface of country, and near exposure to infection, would render the sterilization of the soil an enterprise much too expensive and tedious ; the immediate help of a strict and intelligent quarantine service is required.

Quarantine may yet be looked upon as horrible and too rigorous for certain commercial and personal interests, but, on one hand, we all have interests to protect,—and the most vital interest : our health and lives ; and, again, the quarantine of to-day, with its modern perfection, has been reduced to a minimum and has become simply a station for inspection and disinfection. The name alone of horrifying remains of the past. So all should bow before the general appeal and the general interests of a country demanding protection ; and, instead of obstructing progress, should work actively to help science to render the means at hand still more perfect and less stringent, and invent others more effective and of easier application.

To protect us against fire, accidents and crime, the law demands of us certain requirements that do not always suit our views or our funds ; but, for the general good, we are obliged to yield. Should the law not be even more inflexible and powerful with regard to the dictates of the apostles of Hygiene, that benevolent daughter of Esculapius and protecting goddess

whose sole care, like ours, was to watch over the health of mankind and prolong the existence of each of its beings.

By thus judiciously combining the two doctrines we may hope to secure almost absolute immunity and, at the same time, reduce to a minimum the exactions of quarantine and other rigorous measures; commerce and hygiene may thus be brought to an harmonious understanding and hereafter work in concert.

The calm with which we have witnessed for the last three years the menaces of cholera; the success with which it has been repulsed from this continent up to now, and the effective protection against yellow fever provided throughout the Mississippi Valley during these last ten years by the model quarantine of New Orleans, prove not only the progress accomplished and the efficacy of the actual system of quarantine, but also the confidence and co-operation of the intelligent public. This is a great step towards success. Let the good results of our labours be repeated and publicly brought out, and our humane instructions and exactions will soon appear less barbarous.

There is still room for progress, both to oppose the introduction of germs and to purify and sterilize the soil, so diminishing danger, and at the same time commercial restraint. Among other things navigation requires looking into. Is everything done by our great steamship companies, usually so interested, to facilitate our arduous task? Is the sanitary protection afforded sufficient? Have they on board all their vessels every suggested and available means of stamping out a budding disease and thoroughly destroying its effects? Have they methods of isolation and disinfection sufficing to protect healthy passengers and save from infection the ports they enter? Are they sufficiently under the control of health regulations? Those are questions that deserve our attentive study.

Ladies and Gentlemen—Communicable diseases that arise on our soil, particularly variola, typhoid fever and tuberculosis, have already often been the objects of our labours, and the results obtained, both as regards study and practice, have proved that they may be classed among preventable diseases.

Variola, so frequent and disastrous among us, has been van-

quished and is now kept in abeyance. The number of its victims, so numerous but a few years ago, has considerably decreased, and in a short time we hope it will be an exception to hear of any.

This death-dealing, beauty-destroying scourge will have succumbed to three inflexible agents—vaccination, isolation and disinfection. We shall have won in the energetic fight against this fell disease the gratitude and co-operation, not only of the general public, but more especially of the ladies, and this latter consideration means success to other measures of public health.

The experience of the last fifteen years has proved that the mortality from small-pox is inversely in proportion to the success of vaccination. In countries where vaccination and revaccination are obligatory (Germany, etc.), it ranges from 1 to 2 in 100,000; while in those in which the preservative is less enforced it reaches from 32 to 150. Such statistics are the best argument in favour of vaccination and revaccination. To convince every one of the necessity for such measures we must 1. Remove all apprehension or reality of danger; 2. Prove by stern facts and figures the good results obtained. The first consideration brings us to the importance of adopting, after careful study and experiments, the best means of obtaining pure lymph and insuring aseptic vaccination. With those agents no doubt need be entertained as to the danger or efficacy of vaccination. The second point requires the compiling of statistics, and especially the wide-spread publication of the good results. In a short time, by such proofs of utility, the public, and especially governments, will be thoroughly convinced of the urgency of obligatory vaccination and revaccination.

Typhoid fever and tuberculosis are even more malignant in their ultimate results than variola or great epidemics of other dreaded plagues, because their action is persistent, insiduous and universal. The attention of the public and others is not thus thoroughly awakened to the threatening danger, and no efficient opposition is brought to bear against the ravages of those two devastating diseases. No expense or study should be considered to discover means of fully arresting the action of those scourges; the demand is urgent, the answer, vital.

It is deplorable to see the continual ravages of typhoid fever among young people; it seems to maliciously devote itself to cutting off in the prime of life the more healthy and useful subjects; in the end the result is a most disastrous loss to the community.

Water being the one great medium of its spreading, all efforts should unite to obtain pure water supplies. The cause and the remedy being known, it is the duty of interested persons and governments to procure such help from sanitary engineering and elsewhere as will give the desired results. Do our municipal councils realize their responsibilities in this matter, and are they fully alive to their duty? We have before us, to be imitated, the examples of the Romans and Ancients, who drew back before no expense or labour, time or distance, to obtain wholesome water, and who built in every country where they ruled those monumental aqueducts which still excite our admiration.

This points to the urgency of developing and perfecting the study of sanitary civil engineering. It is a science that should be afforded all means of progress and quickly placed in a position to give its much needed powerful help to the cause of hygiene.

Among all the diseases that have been the subjects of our labours, not one actually forces itself more pressingly upon our zeal than tuberculosis. This implacable affection, that may be rightly termed the scourge of mankind, continues, despite all science and philanthrophy, to persistently thin the ranks of mankind and reap its deadly tribute from every family. To it alone are due the enormous proportion of one-sixth of the deaths from all causes.

Thanks to the discoveries of modern science we now know that this disease is produced by a germ or microbe; consequently that it ranks among contagious diseases and is amenable to hygiene. The resources of sanitary knowledge must therefore be immediately brought into action to perseveringly check its destructive operations.

We are aware at present that, contrary to what has been

believed up to these last years, the disease is rarely hereditary and nearly always acquired. We know also that germs, once set at liberty by the dessication of the sputum of consumptives, are to be found almost everywhere; that we absorb them with the air we breathe, and may ingest them in certain foods—milk, butter, cream, or the meat of tubercular animals.

But it is also proven that, even if such are the principal modes of transmission of the germs of this terrible disease, nevertheless, they can implant themselves and evolve only in a favourable pabulum; that is to say, in a predisposed subject. This predisposition in the person may be either hereditary or acquired from the dwellings and surroundings in which we live, from our occupations, from certain diseases that we may have, or from certain causes that weaken and undermine our system.

Possessed of this knowledge, we may undertake the combat with courage, as we know in what direction to turn our efforts. We must find and reveal the best means not only of preventing the dissemination of germs in the air and their ingestion with food, but also of rendering ourselves refractory to their action and of correcting any existing predisposition, whether hereditary or acquired; for with the greater number of contagious diseases the great point does not appear to be only the hunting out and destroying of the germs, but the placing of the system in such a condition that it may with impunity receive their attacks; give them no ground to work upon or to feed upon; in a word, "starve" them out.

The enormous destruction of health and life caused by those three last mentioned diseases, and the losses entailed to countries and commercial interests, demand the immediate and cogent interference of governments and municipalities. I again repeat that expenditure is necessary, but there is no excuse for refusing it for such urgent protection.

Ladies and Gentlemen—Not wishing to review all the contagious diseases and sanitary questions that have been and still are the objects of our work and debates, I will simply draw your notice to another question or two which demand the immediate attention of the Association and the co-operation of the

public; I mention food adulteration, alcoholism and vital statistics.

Food adulteration is, I should say, in most cases a crime deserving the severest punishment; it is fraught with danger and is an important factor in the increase of premature mortality, especially among children. Even when life is not immediately endangered, a chronic intoxication is often produced that insidiously and irreparably undermines the health of many a human being, both young and old.

Urgent appeals should be made to the press, to boards of health, boards of trade and governments to raise their warning and protective influence to eradicate such criminal procedures. Municipal laboratories should be established throughout the land for the detection of such fraudulent doings, and justice should deal rigorously with all offenders.

Could there not be a general understanding, so that in each country each state and each province on this continent, the same uniform methods of analysis be employed, and the same unwholesome products receive universal publication.

Alcoholism is the plague of many northern climates, and we are not without participating in its dire influences. It should not be allowed to escape our vigilant attention, for it is the ruin of health, of society, and of a nation. The Fates point to the gloomy picture of ancient times, but the experience of the past does not seem to have succeeded in rooting out this terrible evil, which is the harbinger and entertainer of all crime and vice. Alcoholism has for its share more than half the occupants of our prisons, hospitals and lunatic asylums. Not only do those addicted to drinking intoxicating liquors most of the time throw their entire families upon the state for support, but the latter is also obliged to look after their scrofulous, idiotic and epileptic offspring, who are incapable of providing for themselves and are often dangerous to society. Their other children, although less affected by the original taint, are generally worthless subjects; lazy, criminal and degenerate, and form loathsome mediums for the propagation of disease and vice.

Under such conditions as these, and with such dreadful

results, we pay too dearly for the money that enters the coffers of the state or municipality under the title of tax or license. It is simply speculating on vice, on the ruin of wealth, health and talents, and such speculation is no wise justifiable, and should not be tolerated under any consideration. By every means in our power this plague should be opposed and if possible exterminated ; it is more deadly than contagious diseases, and more difficult to deal with. The problem is one for serious study and painstaking measures. Good work has already been done, and if the desired result has not yet been attained by the measures advocated and tried up the present, let us not be discouraged, but set to work again. Let us find out if there are no other ways of succeeding. Are men sufficiently educated in their childhood on the dangers and terrible consequences of indulging in the use of liquors, even in a social way ? And in this as in all other matters of hygiene, why not ask more of education and not trust exclusively to legislation ?

To insure the success of the sanitary reforms dictated by the progress and discoveries of modern hygiene, we must obtain the good-will and co-operation of the public. For this purpose, we must set before them plain facts and figures, problems solved and strikingly exposed. It is then of paramount importance to unite our efforts so as to bring each of our national governments and each of our states or provinces to possess and adopt a complete and uniform system of vital statistics, in order to bring out such convincing evidence as will happily impress the public. Plain numbers alone are often sufficient to awaken them to a state of things they did not surmise. In these statistics should be included not only city districts, but rural divisions also ; for, alas ! in the country there are still many sad conditions of unhealthiness and ignorance that require to be relieved.

Such are the principal questions which, with the unmentioned contagia : diphtheria, measles, scarlatina and others, the protection of infantile health and life, the destruction of and utilization of garbage and refuse matter in large centres, the purifying and sterilizing of the soil, the action of pathogenic germs, the pollution of water supplies, &c., are to be submitted to our

study. I feel confident that, with such a programme, this congress will bring forth as happy results as those of preceding ones ; nay, as we are always progressing, we may hope for even more.

The perspective of the future is thus very encouraging. The work done during the last fifteen years has been enormous ; what may we not then expect of the next fifteen years ? All over the continent, state, provincial and local boards of health have been organized and are working effectively ; associations, conferences and conventions are studying the most actual and urgent problems of public hygiene ; everywhere, already, a prominent position is given to the teaching of sanitary knowledge ; universities and schools obtain the services of competent and distinguished teachers, and are being rapidly equipped with laboratories of sanitary science ; every city or district will soon have, if it has not already, its municipal laboratory worked by competent specialists.

The practical scientific working is now created and advancing. The generation that succeeds us, luckier than we are in this respect, will be in possession of all that is needed to ensure success ; we shall drop out wishing them courage and perseverance, and be happy if we can claim to have contributed according to our means to prepare the way for them and render less ungrateful the task we bequeath them.

Without fearing to counteract the designs of God, we may continue to utilize the talents He has given us, in seeking the best means of protecting our health and lives and of attaining the average of longevity.

Without wishing to frustrate the decrees of his Supreme Justice, let us not forget that contagious diseases and epidemics, although they may in a measure serve as punishment for the waywardness of man, are most frequently the outcome of his errors and ignorance in the preservation of his health, and, as such, they should be struggled against.

The protection and preservation of one's health and that of one's fellow beings is not only a right, but a solemn duty.

My dear Colleagues,—As President of the Association, I

cannot close this address without acknowledging the zeal and perseverance shown by the Local Committee of Arrangements in the organization of this congress, which they have so largely contributed to make a success. I am happy in the name of the Association, to express our gratitude to each of them, especially to their devoted Chairman and Secretary.

To the distinguished statesmen who honour us with their presence, to the citizens of Montreal who are here assembled, and to the ladies who so largely contribute to the brilliancy of this formal opening of our Congress, the Association is grateful. Their presence proves the interest shown in its proceedings and is a powerful encouragement to our labours and a guarantee of further success for sanitation.

To the Press—that true and powerful friend of hygiene—we also owe our gratitude for the interest it has always taken in meetings and the publicity it gives to our work.

Ladies and Gentlemen, I again renew my thanks for your kind attention and forbearance.

"ON THIS SIDE JORDAN."

Inaugural Lecture in the Faculty of Comparative Medicine, McGill University, October, 1894.

By J. G. Adami, M.A., M.D.

Professor of Pathology in the McGill University, Montreal.

Gentlemen—In this Faculty, as in that of medicine, it is the old established, time-honoured custom, and a kindly custom at that, to have, as it were, a little ceremony of welcome at the beginning of each new academical year in the shape of an inaugural meeting and an inaugural lecture. It is in this way that you, the new students just entering the school, see before you, passing, as it were in review, the body of your teachers—that we, your teachers, make our first acquaintance as a body with you. Some of us, naturally, you have seen before, as you have been hovering in a state of uncomfortable unrest round the precincts of the college; just as, according to the old poets, those about to be born hover disconsolate in Hades. To one at least of us you are already personally acquainted through that simple operation of enregistration; but as a body you are unknown to us until now, and we are complete strangers to you.

Thus this inaugural lecture serves to both parties concerned, to you and to us, a very useful purpose, and speaking for my associates I may say that individually and as a body we all of us are more than glad to have this opportunity of meeting you, of making, even if rather formally, your acquaintance, and of striving from the first, not simply to put you at your ease, but what is more and of higher import to make you feel from the start that you are not coming into the camp of your enemies, but that you have in us a body of those earnestly desirous of being your friends in the highest sense of the term, of helping you on and of making each one of you one of us; one, that is to say, in spirit and in desire to do good work and honest in what is among the very greatest and noblest of the pro-

fessions. I say advisedly one of us, for now you have passed a stage further in your career by the ordeal of matriculation; you are no longer members, as you must have been in the old days, of isolated schools, but by matriculation you have become members of a University, and in this way you are members of a large corporation which, though at first you may feel inclined to regard as composed of two wholly dissimilar elements, of teachers and students, I would nevertheless have you from the start regard as being a single united body; for in the university it is that the student cannot live without the teacher, the teacher is of no effect unless he has students, and the more these two elements, elements of co-operation, work together towards one common goal, the greater must be the power of the university, the greater its harmony, the greater the work by it performed. We, your professors that are to be, and you are separated by no wide gulf; on the contrary, we are more nearly akin to each other than is possible, I suppose, for you at this moment to realize, and while at the very start I would point out to you, the scholars, that it is wise that we the teachers receive from you, as I know we shall, all that respect befitting those who occupy a senior position, a position of authority; nevertheless, at the same time I would ask you to believe that we, like yourselves, are human and have like feelings and similar aspirations.

It seems to me but a very little while ago, and yet when one comes to measure the time it is long years back since I, like you, made my first entry into university life and sat in the theatre in which all was new to me, surrounded by those who were to be the friends and rivals of the next few years, and listened to the inaugural lecture introducing me into my new career. I still see clearly the scene, see the strange faces around me, the body of professors trooping in one after the other, see the old principal of the college stuttering out some general statements with regard to what had been happening during the last few months in college and hear him give a few words of welcome, and

then see before me the professor to whom was allotted the delivery of the inaugural address. How I remember as clearly as though it were yesterday the awe that fell upon me in listening to him, the feeling that here was one belonging to another world immeasurably superior; the wonder, too, that any ordinary man could attain to such knowledge as was evidently his. I remember wondering, too, what it all meant, what the future would be, how I should stand in relation to those students, my opponents that were to be, how possibly I could gain any respectable place in the contest with those keen-faced, intelligent young fellows, whose capacity I did not in the least know, but of whom many had intellect written on their countenances; wondering, in short, whether I was to be a success or a failure and whither this career I had just entered upon would carry me. Well, gentlemen, it has carried me here, and now I am occupying the position towards you that that dread professor of my first inaugural lecture bore towards me. Whether you in this new country feel quite the same awe and reverence towards your superiors as has become the habit of the old country I do not feel now inclined to discuss; but I will say to you, speaking for myself, that during the years that have elapsed since the moment of my green entry into the ranks of the freshman I do not feel that I have undergone personally in myself any great transformation, and I fancy that each one of my colleagues would tell you the same; we feel older, it may be, we know more of the world, but the longer we live the humbler we become as to the extent of our knowledge, the more we work at our respective branches of medical science, the wider appears the field of the unknown that looms before us. Nevertheless, that which gave me pleasure as a freshman I can still appreciate, that which gave me annoyance or pain does so equally at the present time. I have still the same feelings in me of admiration and respect for manly conduct, of disdain for that which my conscience tells me or told me then was not quite manly, and just as in those old under-

graduate days I enjoyed an occasional, shall I call it "bally-rag," and felt guilty if any damage was done in the course of that row,! so now-a-days, in my heart of hearts, I feel the old sympathy for any form of hearty amusement, only now under the somewhat altered condition when I find myself in a responsible position, instead of feeling guilty when harm is done, I must frankly confess, feel irritated and ready to come down upon the offender. That is inevitable with the assumption of responsibility and is right.

You see thus, gentlemen, that I am giving to you, as it were, the inner feelings of a professor, and am wishful to make clear to you that the professor is a human being, anxious to make you assured that we, your teachers in the years that are to come, are beings of clay like unto yourselves ; so that if the in coming years in the first place you begin to think that our decisions in matters relating to you are worthy of discussion by you, I would ask you always to remember that those decisions have been arrived at by those, not your antagonists in any way, but by men who are still students, still of yourselves, only differing in this, that we are burdened with responsibility, whereas you, happily, for the next few years are relatively free from great responsibility. And in the second place I would without arrogance, put all this before you in order to encourage you in the thought that if in the course of your study of this great subject of comparative pathology and comparative medicine, you gain the desire to do good work and high work, work that shall be for the benefit of your fellows in their treatment of dumb creatures, you may not be discouraged by the idea that there is a great gulf fixed between those who are teachers and investigators, and you who are students and undergraduates. For we are all students. I, in the old days that I have mentioned to you, had not the remotest idea that I should ever be found worthy to assume the responsible position of a University teacher, but somehow, as I say, and largely owing to the encouragement and kindly advice of my old teachers, I find myself here in this high position addressing you, who

now, coming from places, many of them long distances apart, are met together in a body for the first time.

You are at this moment on the threshold of a new and in many respects a larger existence than has been yours previously. During these next three years that are to come, you will be finding your level, will be testing yourselves and others as to your relative capacities, and while acquiring a knowledge of a profession which you intend to be that of the rest of your lives, you will of necessity be acquiring a larger and wider education at the same time.

Leaving aside for a moment the subject of the profession and of your competition and endeavours to obtain a worthy position in that profession, let me for a few moments address you upon the subject of this larger University life I want you at the outset to feel that in becoming the undergraduates of a university you are doing something more than merely attempting to assure for yourselves a good professional education in the narrow sense. The great advantage of the university education as distinguished from the school education, and still more from private study that indeed which, in my opinion. is the very salt of university life, is the fact that in the university to a far greater extent than is possible in the confined limits of school, you gain that knowledge of men and manners which will give you a stamp throughout life, which must throughout life distinguish you from others who have not during the early years of manhood had the opportunity of mingling freely among all sorts and conditions of those of their own age. During these years of early manhood, it is that one has the largest opportunity of forming intimacies ; never again will you find it so easy a matter to form friendships—never so easy a matter to get to know men intimately, to read their thoughts, to see clearly the mainspring governing their actions. You and your fellows are at this stage in what may be termed a highly receptive condition, and the virtue of the university life is that at this receptive period of your existence you are thrown in communion with, and into contact with, a

larger body of men, equally receptive, impulsive and transparent, and from this very fact, having a large amount of material to draw upon, you can begin to apprehend easily their motives and their methods in life, and from this comprehension can form your model; so that insensibly the practical lessons that you now gain in men and manners must mould and affect your whole future life. In rivalries, in the pleasant associations also outside the class room with your fellows, you learn how to conduct yourselves towards them, you see and learn what course of action it is that best commends you to them, and from example, and from hard experience you learn thus how to conduct yourselves well and honourably towards all men. This is, as I say, the very salt, it seems to me, of a university career, and I have little doubt that the more you keep this in mind, the more, to look at the matter from the very lowest standpoint, you will profit in the future. As the old motto of one of the oldest of the English public schools has it: "Manners makith man." And I have little doubt that from a purely commercial and self-seeking side, as well as from the higher ground of self-respect and mental content, you will in your future life experience the truth of this saying.

And here with regard to this mingling with your fellows and the advantages that accrue therefrom, let me impress upon you the fact you have become members, not merely of a Faculty of the University, but of the University itself, and urge upon you to seize all the benefits that can be gained in this larger field. There is I find in too many of the universities of this continent the tendency of the undergraduates to wholly overlook the fact that they are members of a larger whole, and to content themselves with entering heart and soul into the affairs of their Faculty alone. I own that it is difficult to overcome this Faculty feeling, and I don't wish to imply that in itself it is not most praiseworthy, as praiseworthy as it is natural. You are inevitably thrown into most intimate contact with those who are pursuing the same course as are you yourselves.

With them you have common interests and the strongest bond of union. But let me point out how much you lose if you let this override everything. You have, it is true, the same interests as have the other undergraduates of your Faculty, but these are what must be your interests throughout life, and never will you be able to tear yourselves away from them wholly. Never again will you have the same opportunity as will now during the next three years be yours of meeting on terms of frank intimacy those of different interests, different modes of thought, different aspirations, of obtaining so easily an insight into and sympathy for the controlling impulses of those who are embryo doctors, lawyers, theologians, engineers and would-be members of each of the learned professions. The more you learn to appreciate and comprehend the different minds of men, and the diverse modes of thought associated with each line of life, the better and more capable men do you become—and as I say, never in all probability will you at a later period have such an easy opportunity of acquiring all this. Thus it is that I would beg you with all earnestness, while entering with eagerness into the concerns of your own Faculty, and while making your most intimate friendships within the walls of this college, at the same time to embrace every opportunity that leads to making you feel that you are members of the university. Meet and mingle with the students of the other faculties in games upon the campus, in the sports, in the debating and musical and other university societies, and again outside the university, and at all these points of contact with the other students do your very best to make them through you respect your Faculty and your profession that is to be. For remember this, that it is very largely through you of the younger generation that veterinary science is to gain a more complete acknowledgment in the country, a greater meed of respect. That acknowledgment will come freely when you show yourselves, each one of you, the equals of the students of other faculties—of the members of the other learned professions.

You have a large and worthy task before you ; embrace every opportunity of preparation for the task.

While treating of this matter of manners and mingling with men there is in this university life another advantage that I wish to bring before you, the advantage namely, that in it you learn the benefit of being a member of a corporation, of a well-defined body, of those having similar aims and similar ideals. If you pass in review the whole animal world you will see well exemplified the benefits of belonging to a corporation, for you will in such a review certainly make this out that it is those classes of animals which are gregarious, which have learned the benefit of combination for common ends and for the preservation of the species, that have preserved the species and have thriven most. Observe the strength and security that is obtained by relatively defenceless animals, such as the various classes of cattle and sheep, not to mention the smaller ants, bees, herrings and so on, by their gregarious mode of life. A sheep alone is an almost absolutely helpless animal, and the species has been preserved and has thriven purely in consequence of the fact that the members of the species seem at a very early period to have realized the truth that union makes strength, and in this way the species has endured, or to put it otherwise, the individual sheep have prospered. So it is with men for any class of individuals to be strong and to make its influence felt there must be co-operation and combination. The individual alone and unaided easily succumbs to adverse influences ; he gains strength and support so soon as he realizes the benefit of living, not for himself, but for the species ; so soon as he realizes the truth of the paradox that in subordinating the desire for his own immediate gain to the good of the body of which he is a member he ensures his greater gain. And here during these undergraduate days it is that you will acquire that feeling that you are one of a class, and will aquire it so strongly that even in the years to come, when you as practitioners are isolated one from another and scattered over the length and breadth

of the land, the feeling that you are a member of a university, a McGill man and a member of a school that has always had a high ideal in veterinary matters, will endow you with a strength and power that time after time you will find to be of the greatest possible help.

Well, now, to pass on to the other side of the question that I left over, I refer to the educational advantages of this university life. You will, I doubt not, already be attempting to gauge, or at least will be wondering as to, your own capacities, your own powers in relationship to the capacities and powers of those you see around you—will be wondering how it will fare with you during the coming years. Some of you will be confident of success; others,—I trust they are but few,—merely satisfied that you may be able just to scrape through and obtain your qualification with a minimum amount of work coupled with the maximum of comfort and personal indulgence. I trust, as I say, that this last class is a very small one. I am not going to flatter you by declaring my belief that it does not exist, for after all you are but human; but if there is any one here whose conscience tells him that he belongs to the latter class, I would earnestly ask him to reconsider his position—ask him to remember not merely for his own eventual good, but also for the good of that body to which he has voluntarily joined himself, that such a line of proposed work, or want of work, is in itself as utterly harmful and emasculating to him as an individual as it is destructive to the advance of this school, of this Faculty, of which all of us are proud, which is in its days of trial, though success has come to it, and greater success is assured to it, but which can only keep that extended reputation by the combined and determined effort on the part of *every individual* connected with it. For this Faculty to make itself felt throughout the length and breadth of America, it is necessary there should be a long pull and a strong pull and a pull all together; and surely it will be a matter of no small self-satisfaction in the years that are to come, when the name of the school is celebrated everywhere, for each one

of us to think that we have had some part in the making of that name and in the keeping of it.

I will not say to you that all of you can do equally well and make an equal mark; I will not say, as one is apt to say on such occasions, that you have all equal powers and that it is the fault individually of each one of you if he is not at the top of his class. To say so would be absurd; men are not born alike, men are not endowed with equal powers. As Carlyle, I think, has remarked, men are no more equal than potatoes are equal. But while some, it may be, have had given to you ten talents and some five, there are none of you who are absolutely talentless; the very fact that you are here, that you have elected to take up as your life-work so onerous a profession is in itself an evidence that you know yourselves to have at least a talent.

But if, then, the number of talents allotted to each of you varies, you can during the next three years learn this, how best to employ those talents that are yours to the best advantage. It is in this competition with your fellows that you will find the solution of that problem. You will find that you have gifts rather greater than your fellows in some one direction, and discovering this, my advice is that you employ them with the greatest assiduity and thereby to the greatest advantage. And this is another good of an university education: you learn not only to know others, but to know yourselves. You learn that it is useless to repine because others appear to have greater gifts, and that your own highest personal good is to be discovered in the discovery of how to fit yourself into the scheme of things—how, in fact, the peg you are to find and to fit the most convenient hole.

Your years of school life have been most important it is true, but the three years that are to come must form the critical period of your existence. Those years of school life gave you, as it were, a general training, and it was during them and during the latter period more especially

that you began to realize in what direction your faculties would find their best play. But during them you learned little that had a direct bearing upon the subject of comparative medicine. It is during the three years that are to come that you will make your special preparation for what is to be, I suppose, the life-work of each one of you; and very largely according as to how you profit by these three years will be determined your success in the profession you have chosen. Mind you, here again I do not wish to raise false hopes; I have known, and you must have known, men who have been slack students, whose education has been a miserable one, yet who somehow or other have gained positions of great importance in the profession, and have amassed no small fortunes. I have known also others who have been thorough students to make comparative failures of their professional careers—failures, that is to say, from the monetary side—but I would ask you to compare the inner conscience of two such men, the man who has little knowledge of his profession and the one who has a large knowledge, and to picture to yourself the habit of mind of each of those. Think of the mean estimation in which one of the former class must hold himself when his life is practically one of continued deceit—think of the constant confession he must have to make to himself that he is absolutely ignorant of the principle adopted in his treatment, and of the self-contempt that in his sober moments such a man must have when he considers that his professional life is but one long game of brag. And on the other hand, picture the honest pride there must be to the sincere student when he can feel that although the opportunities that come to him may be ever so much fewer, nevertheless he makes, or attempts to make, the fullest use of each opportunity. He endeavours to treat every case to the best of his ability, not by chance means, but by means that he has carefully thought out. I met one such student, a graduate of this college, during this last summer, and it was a genuine pleasure to me to be in his company and to see how although, at present, he is still young, and the

opportunities that he has are not very numerous, yet each opportunity was utilized to its fullest extent; to see how each case gave him food for thought and for study, and I may add it was extremely pleasant to hear him speak of his old teachers, and state with emphasis that it was the course of lectures which in the opinion, I know, of some of the older students has no direct connection with veterinary science, I mean the course of physiology, that had given him most room for thought, and strange as it may seem to you that constantly from the lessons and suggestions thrown out in that course he had illumination in the most unlikely kind of cases.

Thus, then, gentlemen, I say to you again that it is these three years that are to come which are the critical and all-important years of your life, and according as to how you employ these years, so will you be in the years to come, an honest student and an honest practitioner in your profession, or, I will not say a dishonest, but assuredly an unsatisfactory member of the same. In fact, gentlemen, we may say that your school days are like the unsettled indefinite wandering of the children of Israel in the wilderness, that seemed to lead nowhere in particular, but which was all the time a preparation for the Promised Land; and that the three years to come are like the years passed immediately before the entry into that land, when, in order to take possession, Sihon, King of the Amorites, and Og, the King of Bashan, had to be conquered and possession to be taken of all the land of the Amorites on this side Jordan. It is now that you are about to come into possession of Gilead and all on this side Jordan and that, like Moses, you will have to ascend Pisgah, whence you will observe the Promised Land. Unlike Moses, you will be permitted to enter into it; and I would add that the higher you ascend this Pisgah, the more clearly will you be able to map out the rivers and the dales and the hills and the lakes of that Promised Land, even unto the utmost sea; the more clearly will you see the relative positions of the various strongholds scattered through the

country. So that the higher now you make your ascent of Pisgah, the more successfully will you traverse that Promised Land when it is permitted you to enter into it; for the more sure will you be as to the relationship of one region thereof to the other.

There are yet one or two other points that I would like to bring before you :—First of all with regard to the subjects that you work at; while I would ask you to work hard while you work, I would also suggest that early in life, in addition to the study that is requisite for your profession, you select also some hobby, some subject that takes you wholly outside your own veterinary profession—some hobby that is not horsey, but which in the riding will fully exercise your faculties. As a matter of experience I have found that the most successful men and at the same time the most powerful and interesting men that I have come across, have one and all had their hobby wholly apart from their life work; I have known great physicians whose hobbies have been such subjects as 17th century divinity in one case, etching in another, horticulture in another. I have known great railway magnates of whom you might firmly believe, if you met them in their leisure moments, that the study of porcelain or of pictures was quite the absorbing passion of their lives; and the amount of fresh, healthy interest that these men have taken in their hobbies has been something remarkable. So, too, I would ask you to take up something of the nature of a hobby; it is impossible to suggest what you should take up, simply because every one's hobby is different from other people's, just as the trend of that man's mind and thoughts is different from the trend of other men's minds. The only thing I can suggest is this, that if you find there is some subject which excites in you more than a passing curiosity, you cultivate that subject; in your leisure moments work it up, hunt up in your libraries and elsewhere a knowledge of anything that relates to that subject. And this very having a hobby will make broader men of you, and also will give you an entry to

an extent that will seem remarkable to you, into societies and acquaintanceships of those whose professional rank is entirely different from your own ; in fact, outside the world of your profession, you will have created a new and delightful world for yourself.

Mind you that in this I am not advising you to take additional work ; your hobby will not be work, it will be recreation. Remember this, that the true and the best holiday is not stoppage of work, but change of work ; it is turning the mind away from that which generally occupies it into totally different channels.

These suggestions that I have laid out to you, gentlemen, are not arranged, I am sorry to say along any definite lines ; I am ashamed they do not form any consecutive whole ; nevertheless I have attempted to lay before you thoughts that have often been in mind, thoughts gained from experience and observation rather than from the reading of books, thoughts which have originated either from my own personal experience or from the observation of others, their mode of life and their success in life. Perhaps, if you will attempt to sum them up you will find that practically they can be summed up into this. My own experience has led me to think but poorly of the man who is a book worm and nothing else ; to think even more poorly of the man who is slack ; and to see that neither of those classes of men do good in the world or achieve true success. It is those men who throw themselves heartily into work and college life outside of classroom that I find happiest and most successful in their future careers. And finally, I have learned to appreciate most those who have the widest range of interests, and the greatest eagerness in the pursuit of those interests, and to see that it is those men, who, provided they pursue those interests at right times are not merely the happiest, but are bound to make a mark in this world and to do good, not simply to their own immediate surroundings, but to those distant, not merely in place but also in time.

Finally, gentlemen, let me once more assure you, on the part of my colleagues, that in us your teachers you have those who, as a body and individually, are your friends, willing to counsel, aid and support you to the best of our individual ability, and that we feel, and wish you also to feel, that by combination and hearty union we shall do the best work and you will be the lasting gainers.

Society Proceedings.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Proceedings of the Twenty-second Annual Meeting, Held in Montreal, September 25th, 26th 27th and 28th, 1894.

September 25th—First Day—Morning Session.

The Association met in the hall of the Y.M.C.A., and was called to order at 10 a.m. by the President, Dr. E. P. Lachapelle, of Montreal.

Dr. Robert Craik, of Montreal, reported on behalf of the Local Committee of Arrangements a very attractive programme. He also announced the social features of the meeting. The committee had arranged for trips over the Lachine Rapids and down the St. Lawrence to Grosse Isle.

The reading of papers was next proceeded with. Dr. H. F. Nuttall, of Baltimore, contributed a paper entitled "Hygienic Notes Made on a Journey Through Italy in 1894," which was read by Dr. A. L. Gihon, in the absence of the author.

This paper described the sanitary conditions, particularly in reference to water supply and sewage of Rome, Naples, Venice and other Italian cities. In Naples, poverty and ignorance provided an easy prey to every epidemic until 1884. But after the cholera epidemic of 1884, the government resolved to spend one million francs for sanitation. New sources of water supply were secured, new sewers built, and whole blocks of tenements were torn down and replaced by modern houses. The result has been to impart habits of cleanliness to the people and to greatly reduce the death rate.

"The Cart Before the Horse." By Dr. Benjamin Lee, of Philadelphia.

The object of the paper may be briefly embodied in the two following propositions :

1. Copious water supplies with the aid of what is known as modern plumbing, constitute a means of distributing fæcal pollution over immense areas through the soil, through subterranean water courses and in surface streams, and cannot therefore be regarded with unmixed approbation by the sanitarian.

2. The question of drainage and sewerage, whether for individual residences or for communities should always precede that of water supply : and no water closet should ever be allowed to be constructed until provision has been made for the disposition of its effluent in such a manner that it shall not constitute a nuisance prejudicial to the public health.

Dr. Wyatt Johnston, of Montreal, read a paper entitled " Observations upon Sedimentation in Water." The amount of settling which takes place in what is called the settling basin of the Montreal Water Works, is too small to be seriously considered. The capacity of the basin being only 23,000,000 gallons and the daily consumption about 18,-000,000, the water really only passes in and out of the basin. In the reservoir the change in the water is also very rapid, although not to the same degree for similar causes. However, analysis proves that bacteria are far less numerous in the reservoir water than in the settling basin. The melting of snow in the spring has a tendency to increase the number of bacteria in the reservoir water. As to the value of sedimentation from a hygienic point of view, it is much below that of a sand filter.

" The Long Island Water Basin, Brooklyn's Reservoir." By Dr. A. N. Bell, of Brooklyn.

After a lucid description of the basin, the author said that while the waste of streams is enormous, it is nevertheless easy to appreciate from a knowledge of the conditions of the soil and the wells sunk in it, the inexhaustible adequacy of the Long Island water basin to supply water sufficient to meet the demands of Brooklyn for all time.

Dr. Frank T. Shutt, of Ottawa, Canada, contributed a paper on "The Water of Our Farm Homesteads." During the past six years the chemical department of the Dominion Experimental farms has examined some hundreds of samples of water from wells on Canadian farms, and the fact has been impressed upon the writer that the evil of polluted water is a lamentably common one throughout the country districts, both in the villages and on the farms. The only method the speaker knew for lessening this evil was by instruction and advice, by first emphasizing the great danger that lies in using water polluted with excreta or drainage from filthy sources, and second to teach the people that pure water is as much a neceesity for the farm animals as for man. Third, farmers must be cautioned against sinking wells in barn-yards, stables, or near the pig-pen or privy.

Mr. Geo. W. Fuller, of Lawrence, Mass., followed with a paper entitled "Sand Filtration of Water with Especial Reference to Recent Results Obtained at Lawrence."

While the removal of pathogenic bacteria by chemicals, including coagulants and by heat will forever be directly dependent upon human attention, he ventured to predict that the day will come when a knowledge of filtration among sanitary scientists will be such that filters may be constructed and operated by which water, free from objectionable bacteria, will be supplied to hundreds and thousands of citizens and require the attention of a mere handful of men. During the five years preceding the use of the filter at Lawrence, the average annual death rate from typhoid fever in Lawrence was 1.27 per thousand inhabitants. The population of Lawrence is 50,000, and this average is equivalent to sixty-three actual deaths per year. During the past year there have been 26 deaths from typhoid fever, a reduction of 60 per cent. Furthermore, it has been learned of the 26 who died, 12 were operatives in the mills, each of whom was known to have drunk unfiltered and polluted canal water, which is used in the factories at the

sinks for washing. In conclusion, it has been found practicable to protect the consumers of infected water supply by means of sand filtration.

"Some Deductions from Bacteriological Work on the Water of Lake Ontario." This paper was by Mr. E. B. Shuttleworth, of Toronto. It dealt with the normal bacteriological character of lake water, and the depth of water as affecting the number of bacteria, and the author is inclined to think that the number of bacteria is directly influenced by season. He is convinced that in their nature certain micro-organisms multiply most rapidly at certain seasons of the year. He threw out the suggestion that this may have an important bearing in explaining the prevalence of typhoid fever at certain times during the year. This seasonal peculiarity is very well marked in Toronto, when every September shows a sudden increase in the typhoid rate, with a corresponding decline after October. Since May last he had been paying attention to the temperature of tap water, which seems to be related to the development of this disease. He hoped in the future to throw some light on the subject, as the experiments of numerous investigators had shown that it is possible for micro-organisms to exist and multiply enormously in distilled water, or at all events, water containing only the minutest traces of organic matter.

First Day—Afternoon Session.

Dr. Chas. Smart, of Washington, D.C., Chairman, read the Report of the Committee on the Pollution of Water Supplies.

The report reviews at length the influence which a polluted water supply may have had in the recent cholera epidemic in Europe, and upon the spread of typhoid fever on both continents. The efforts to purify water by sand filtration were also reviewed, wherever made, and the report concludes :—"From this brief review of facts and opinions concerning filtration, it will be seen that your

committee hesitates to reaffirm its former positive language with regard to the sufficiency of filtration as protection against typhoid fever. Nor, on the other hand, do we regard the testimony as authorizing a formal declaration of opinion in favour of the efficiency of filtration. Our experience in this country is extremely limited, but it is hoped that the success achieved at Lawrence will lead to the filtration of other surface waters, each of which will probably teach an important lesson in connection with bacteriological experiments and with the mortality from typhoid fever, before and after the construction of the filter beds. In view of an unbroken record of typhoid fever in communities that use raw river water, and an equally unbroken record of lessened typhoid rates following the filtration of such river supplies, your committee considers that in Washington, D.C., special attention should have been given to the improvement of the general supply. This country needs some practical lessons in methods of water purification.

At the conclusion of the report, Dr. Gardner, of London, Ont., offered the following resolution :

Resolved,—That in view of the danger to the public health by the sewage contamination of our fresh water lakes, rivers and streams, this Association memorialize the different federal governments, as well as the state and provincial governments to pass laws prohibiting the contamination of these water supplies by sewage from cities, towns and villages, and compel them to provide some means for the treatment and oxidazation of this sewage before emptying it into these places.

The resolution was referred to the Executive Committee and subsequently adopted by the Association.

" Management of Diphtheria Epidemic in Rural Districts." By Dr. Chas. A. Hodgetts, of Toronto.

The medical officer must exercise a personal supervision not only over his patients, but generally superintend the carrying out of all orders, for upon the thoroughness of the work depends to a very large extent the prevention of

further outbreaks in the district. He felt the inhabitants of the rural districts should receive more attention from the sanitary authorities than they had heretofore, and some inexpensive system should be adopted for the more efficient and prompt management of epidemics in those portions of our country. Schools should be closed in the district until such time as the inspector has satisfied himself in the manner indicated that the household of the individual scholars thereof are free from diphtheria.

"Practical Difficulties of Medical Health Officers and Physicians in Dealing with Inspected Cases of Diphtheria," was the title of a paper read by Dr. Peter H. Bryce, of Toronto. With every advance in our knowledge we find that the practical benefits are often limited by unforeseen difficulties, and that bacteriological results bring into prominence the difficulties which the health officer finds in dealing with cases of sore throat, and which may be summed up as follows: 1st. That according to recent investigations at least 25 per cent. of diphtheria cases are not caused by Loeffler bacillus; 2nd. That physicians endeavour to hide cases in the supposed interest of the client, and conveniently shield themselves behind the assertion that they could not tell whether the disease was diphtheria or not. The author drew special attention to the difficulty of differentiating between cases of ordinary sore throat and real diphtheria. It was impossible often to decide that cases were really diphtheria without microscopic examination.

Dr. J. Ed. Laberge, of Montreal, read a paper in French, entitled "Vaccination as a Preventive of Contagious Diseases. The paper was historical, it being largely a review of Pasteur's experiments.

"Innocuous Transportation of the Dead." This paper was read by Dr. J. D. Griffith, of Kansas City, Mo. The author said that the age demands a far greater protection to the public health. He was convinced that we owe to the travelling public that greater precautions should be taken in the transportation of the dead body. He cited as

evidence of the virulence of a dead body, that in a Normandy village, 23 years after an epidemic of diphtheria, some of the bodies of those who died of the disease were exhumed and an epidemic at once broke out, first among those who opened the grave, and then spread from them to many others. Other examples were cited. Until the public are educated to the point of the thorough sanitation of cremation, the transportation of dead bodies by the railways is, and always will be, a source of very great danger, The speaker urged that the attention of the different legislative bodies of the country be directed by the Association to a subject of such vital importance. He urged, furthermore, that all railways cut off a small portion of their baggage cars for the transportation of dead bodies, The dead body should be placed in a box lined with zinc. with a door very much after the fashion of a large ice chest. This done the lives of employes would not be endangered ; no broken or open box could become infected, and no odour could escape from the car.

First Day—Evening Session.

At this session addresses of welcome were delivered by Dr. Robert Craik, the Lieut.-Governor of the Province of Quebec (Hon. J. A. Chapleau), the Mayor of Montreal, Hon. L. P. Pelletier, Provincial Secretary, and Dr. Gregario Mendizabel, of Mexico, after which the President of the Association delivered his annual address. (See page 241.) He said the American Public Health Association, since its foundation, now 22 years ago, has never ceased to labour for the advancement of sanitary science ; for the promotion of measures and organisations that should effect the practical accomplishment of the laws and principles of public hygiene. It has thus realized the brightest hopes and most enthusiastic provisions of its worthy founders, and has extended its benefits and influence over the whole of North America. To-day it embraces the three great countries that form this vast continent ; the United States of America, the Republic of Mexico, and the Dominion of Canada, all

three working together in brotherly emulation, recognizing no political boundaries, and striving to attain one unique and humane object: The dissemination of all the knowledge of public hygiene and the development of respect for its decrees. Every year the Association changes its place of meeting, and this for good reasons. The spirit of its founders being to establish a body for the diffusion and popularization of public sanitary science, this object could not be better attained than by extending to its greatest limits the influence of the Association; and for this purpose no surer means could be found than the bringing together of its distinguished members.

President Lachapelle in closing urged the creation by the governments of a new department in their cabinets—that of public health.

September 26th—Second Day—Morning Session.

President Lachapelle in the chair.

The Executive Committee recommended, which was indorsed by the Association, a new committee to consist of five persons, entitled "Steamship and Steamboat Sanitation."

Dr. E. Gauvreau, of Ste. Foye, Quebec, described in a paper the process followed in his institution—The Vaccine Institute of Ste. Foye—for the culture and collection of vaccine lymph, showing that every care is taken to insure absolute safety to the public using the points.

"Restriction and Prevention of Tuberculosis." By Dr. H. E. Wordin, of Bridgeport, Conn. He showed that consumption was an infectious or communicable disease, and that the principal source of danger of its spreading lay in the sputum ejected by a phthisical patient when it has become dry. The breath of a consumptive contained no bacilli, and was not infectious. If the spread of this disease was to be prevented the sputum must be attacked. Phthisis might be communicated by osculation, and among the hygienic commandments should be one for the syphilitic

and the consumptive, "Thou shalt not kiss." He considered that the most practical and the quickest way of restricting the spread of tuberculosis would be to put it on the list of infectious or communicable diseases to be reported to the health officers.

"Examination of the Milk Supply for Tuberculosis in the State of New York." By Dr. F. O. Donahue, of New York City.

He said that in May, 1892, New York State took a step forward in authorizing its Board of Health to make investigations in reference to the existence of tuberculosis in cattle. The relation of the milk supply to infant mortality from tuberculosis was insisted upon by all health officers who had made it the subject of systematic observation. That milk and its product will convey tuberculosis had been proven. When it is considered that milk is the principal aliment during childhood, and enters largely into the diet of all classes, it was a highly important question for consideration. Statistics of New York State show that for a period of eight years last past, every eighth death was caused by tuberculosis. The State Board of Health evolved the lesson that tuberculosis existed in the dairy cattle to quite an extent, and that special legislation was necessary to deal with it. It is confidently expected that future legislation in this regard will be enacted, carrying with it an appropriation commensurate with the magnitude of the work.

Dr. Paul Paquin, of Missouri, followed with a paper entitled "Should the Marriage of Consumptives be Discouraged?" He held that the marriage of a consumptive with a healthy person must lead to the infection of the latter, and that the children born of consumptives are always naturally predisposed to tuberculosis. Thus the centres of infection are increased and the danger to society is made much greater. No consumptive should marry, and it is perfectly proper for science to interfere and use all its influence to prevent such marriages.

"The Climatic Segregation of Consumptives." Dr. Henry Sewall, of Denver, read a paper on this subject. He proposed the following plan for the treatment of consumption in its early stages, viz., he would establish at favourable points in Colorado a series of cottage sanatoria. The cottage plan was eminently the best in its adaptation to the character of the climate, the people, and the disease. The efficiency and feasibility of such an institution had already been established in the Adirondack Cottage Sanatorium of New York, which might well serve as a model for extensive development. These sanatoria should be located with careful regard to climatological conditions, purity of water supply, beauty of scenery, and accessibility to railways.

Dr. John T. Nagle, of New York City, in some remarks upon diphtheria, said that the health department of New York city had been making strenuous efforts to stamp out diphtheria, and with this end it had instructed the bacteriological division to examine gratuitously the cultures furnished it by physicians who attended suspected cases of diphtheria. He said that Dr. Cyrus Edison has great faith in the anitoxine treatment of diphtheria, and it promises to be one of the most important discoveries of modern medicine, and so far as could be judged from the data at hand will afford us a means of not only protecting persons from diphtheria, who have been exposed to the disease, but also a certain means for the cure of the disease, when cases are subjected to this treatment in the early stages. One of the most important and significant features of the treatment depends upon the absolutely innocuous character of the remedy, it having apparently no influence either favourable or unfavourable in health or disease, excepting as to its power of neutralizing the poison of diphtheria.

The afternoon of this day was devoted to pleasure, the members of the Association, many of whom were accompanied by their wives and daughters, taking the trip which had been arranged down the Lachine Rapids.

Second Day—Evening Session.

The President in the chair.

Dr. F. Montizambert, General Superintendent of the Canadian Quarantine, gave an interesting sketch, illustrated by lantern slides, of the quarantine appliances at Grosse Isle. He briefly explained the mode of boarding ocean ships, the examination, disinfection and hospital treatment.

Dr. J. C. Cameron, of Montreal, read a paper entitled "Some Points in the Hygiene of the Young in Schools." He pointed out that mind and body were dependent upon each other, and consequently for the proper development of the individual, the body was to be considered and cared for as well as the mind. He referred to the fact that the physical culture of school children was in too many cases improperly cared for, though in the case of boys, who engaged in out-door sports, the effects were not so marked as in girls, who indulged less in out-door sports and were inclined to be more sedentary. Spinal curvature and pelvic deformity were liable to result from assuming an improper attitude when sitting, standing or walking, and consequently it was of the utmost importance that school children should be taught to sit, stand and walk properly.

"Sanitation in Plumbing." By Mr. John Mitchell, President of the National Association of Master Plumbers, New York. The speaker advocated a semi-annual inspection of all houses for sanitary measures. The rule that at present appears to be observed, he said, is to wait for crape on the door before asking a question regarding the sanitary arrangements.

"Influence of Inebriety on Public Health," This paper was read by Dr. T. D. Crothers, of Hartford, Conn. The facts he wished to make prominent were :

1. The influence of inebriety on public health is of far greater magnitude and more closely associated with the various sanitary problems of the day than is realized at present.

2. Our present conception of the extent, nature and character of inebriety is erroneous and based on theories that are wrong. Our methods of dealing with inebriates are most disastrous and fatal in not only destroying the victim, but perpetuating the evil we seek to lessen.

3. These cases must be recognized as diseased, and be housed in farm colonies, under military care and treatment. They must be organized, employed, and placed under hygienic surroundings and made self-supporting.

4. The present duty is careful medical study of these classes and full recognition of their needs and requirements. Public sentiment should be built up to sustain rational means and measures in their treatment.

5. The sanitary problems that confront our civilization are very closely associated with the inebriate class. One of the central sources of peril to public health is inebriety. This is the one fountain head that must be corrected to break up some of the evils of the present day.

September 27th—Third Day—Morning Session.

The President in the chair.

Secretary Watson read a short paper entitled " A Journal of the American Public Health Association." He urged establishing a quarterly journal in connection with the Association, to replace the annual volume of Transactions. He expressed the belief that the establishment of such a journal would increase the influence and strength of the Association. The matter was referred to the Advisory Council.

Dr. Ralph Walsh, of Washington, D.C., read a paper entitled " Vaccine and Vaccination." He summarized as follows : So-called cow-pox is simply modified variola. The admixture of glycerine with vaccine lymph will destroy all extraneous bacteria without injury to its peculiar active principles. The admixture of glycerine with vaccine lymph, not only does this, but prolongs the activity of the lymph. The selection of lymph and the simple but

important operation of vaccination had not received from the profession the attention they deserved. The physician should see that each infant brought under his care is successfully vaccinated during the first year of its life, and again at sixteen, or better to the point of saturation during infancy. The accumulation of unvaccinated material, and consequently the increased danger of outbreaks of smallpox are caused by the general practitioner failing to perform his duty at the proper time.

Dr. G. P. Conn, of Concord, N.H., read the Report of the Committee on Car Sanitation, of which he is chairman.

The report maintained that the railway companies are very negligent in this respect. The railway car is virtually and for the time being a house on wheels, in which a varying number of people are expected to make their homes for a longer or shorter period, according to the distance which they may be expected to travel. Therefore, like a house it should be constructed on sanitary principles, in which ventilation, heating and such conditions as will allow it to be kept clean are paramount factors in every case. Unless these sanitary principles can be carried out and made permanent, then this house becomes unwholesome and unhealthy, and the conditions become favourable to disease or of spreading it should a contagious or infectious malady find a place within its walls. According to investigations it had been found that the atmosphere of the ordinary coach contained from one to six times as much carbonic acid as other public assembly rooms, such as churches, theatres and public halls.

Dr. Felix Formento, of New Orleans, read the Report of the International Committee on the Prevention of the Spread of Yellow Fever. The report maintained that this plague never originated in Louisiana, but is imported from Cuba, Mexico and Central and South America. It recommended attempts to stamp out the disease in the swamps in those countries and the adoption of thorough sanitary measures in the southern centres, where the disease is wont

to become epidemic. An effort to secure the co-operation of the governments of Cuba, Mexico, Brazil and the Central American Republics was recommended.

Dr. N. E. Wordin, of Bridgeport, read a paper on "Disposal of Garbage," in which he advocated its destruction in an incinerator.

The Report of the Committee on the Disposal of Garbage and Refuse was presented by Mr. Rudolph Hering, C. E., of New York city. It dealt with the character of city refuse, its collection and removal from a building to the place of disposal, and the several methods in vogue for its disposal.

Colonel W. F. Morse, of New York, dealt briefly with the collection and disposal of the refuse and garbage of large cities, describing what was being done in New York in order to find out the best method of disposing of its refuse and garbage.

"Influence of the Climate of Canada on Health." This was the title of a paper read by Dr. W. H. Hingston, of Montreal He touched briefly on the geographical situation and the topography of the country and then went on to show that, after a residence in the country of shorter or longer duration, a change in the constitution could be observed. The high colour which flushed the cheeks of some Europeans faded somewhat and the skin became less soft, the hair became darker and more like the aboriginal type, and the muscles were less prominent. The hot weather did not last long enough to produce any great disturbance of the liver and the cold was exhilarating. The ratio of mortality in Canada was lower than that of Great Britain, and, with the exception of Malta, this country was the healthiest station of the British army. Statistics gathered from the States showed that all constitutions were healthier as they approached the great northern lakes.

Third Day—Afternoon Session.

"The Advisability of Teaching Rules and Principles of Hygiene in the Primary Schools by Means of Object Lessens." This paper was read by Dr. Jesus E. Monjaras, of San Luis, Potosi, Mexico.

Dr. S. Gauthier, of Upton, Quebec, followed with a paper on "The Importance of Teaching Hygiene in Elementary Schools." The speaker held that it was through the teaching of hygiene to the school children that we could eradicate the unfortunate prejudices which directly caused the loss of so many who might have been the strength, glory and pride of our country.

Dr. T. D. Reed of Montreal, dealt with "The Hygiene of Vision in Schools," recommending the introduction into schools of the suggestions of the Anthropmetric Committee of the British Association for the Advancement of Science, in order to test the power of vision and colour sense. He also recommended exercises for the development of the power of rapid and accurate observation.

"A Few Remarks on School Hygiene," by Dr. M. T. Brennan, of Montreal. The points in this paper might be summarized as follows: The rousing of the general public to the necessity of propagating the study of hygiene; the hygienic education of children, whose teachers must be proficient in hygiene. In each school there should be a school commission endowed with power to act. There should be some system of general supervision and the general co-operative support of local and general boards of health and the board of public instruction should be assured.

Dr. Andrew McPhail, of Montreal, contributed a paper entitled, "An Epidemic of One Hundred and Twenty Cases of Paralysis in Children." The paper cantained an account of an epidemic of infantile paralysis which occurred in the State of Vermont during July, August and September, and which the speaker investigated. He first stated that the belief was held that it was an outbreak of

cerebro-spinal meningitis, but he showed in a lucid manner that it was a true myelitis. He quoted the notes of 91 cases out of the 120. In some children the paralysis came on without any symptoms, and in others there was a preliminary illness of a few days resembling indigestion. He described in detail the fatal cases, of which there were 18, and 42 in which there was permanent paralysis. There were also notes of six cases in adults, three of which ended fatally. He then referred to the origin of the malady, giving full statistics of temperature, rainfall, and humidity and geological factors. There were, besides, 12 deaths from the same cause amongst horses, and fowls were likewise affected. In conclusion, he dwelt upon the necessity for having in every State a properly conducted laboratory and a competent staff to deal with such outbreaks and a board of health with authority to investigate epidemics and perform autopsies. The paper had additional interest from the fact that it is the first epidemic of the kind reported in America and the third which has occurred in any country. The speaker refrained from expressing any views or propounding any theories till the pathological work which he has in hand shall have been completed.

"The Advances of Public Health in the City of Montreal" was the subject of a paper by Dr. L. Laberge, Medical Officer of Health for Montreal. The author outlined the development of the several matters connected with the public health of the city and the legislation by which they were governed, such as milk inspection, meat supply, ice supply, drainage and public baths. He gave an account of the present state of sanitation in the city, and concluded by showing that during the last twenty years the death rate had been reduced by 12.87 per 1,000.

Dr. A. A. Foucher, of Montreal, followed with a paper entitled "Myopia in Its Relation to School Hygiene." The speaker presented a chart which illustrated that myopia is more prevalent in the secondary than in the primary schools. In the primary schools of Russia it is 14

per cent., while in those of Germany, Austria, France, Holland, New Zealand, the United States and Switzerland it is 13 per cent.; Norway 11 per cent.; England, Roumania and Belgium, 13 per cent. In the secondary schools in Austria it is 38 per cent., Switzerland 36 per cent., Germany 36, France 36, Russia 36, Denmark 36. In Italy it is 38 per cent., Sweden 34, and in England 38.

Dr. G. Mendizabal, of Orizaba, Mexico, gave some "Observations on Yellow Fever in Vera Cruz and Its Prevention," and was followed by Dr. J. I. Desroches, editor of *Journal d'Hygiene Populaire*, and member of the Board of Health of the Province of Quebec, who discoursed on hygiene in medical education.

The day's session closed with the reading of the Report of the Committee on Nomenclature of Diseases and Forms of Statistics, by Dr. S. W. Abbott, of Boston, chairman.

The committee considered changes in the nomenclature and classification of diseases and causes of death, uniform methods of reporting vital statistics, uniform methods of estimating population and death rates and the adoption of a standard of age distribution. It is quite plain that a fair comparison cannot be made of the death rates of countries, cities and towns in which the age distribution is widely different; hence the importance of adopting some conventional standard to which all populations may be referred, or with which they may be compared.

September 28th—Fourth Day—Morning Session.

Dr. M. T. Brennan, of Montreal, contributed a paper entitled "A Plea for Vaccination." He said vaccination should be performed with all the precautions calculated to insure the action of the pure lymph, free from all contamination and the action of it. Each vaccinator should be provided with (1) pure lymph of a standard strength, if possible; (2) a vial of distilled or boiled water to dilute the lymph; (3) a vial containing a solution of bichloride of mercury; (4) a small alcohol lamp to sterilize the lancet,

etc.; (5) some sterilized absorbent cotton, and (6) some sterilized gauze. All these take up but a small space and may be placed in a small satchel or metallic case. The operation should be done under strict antiseptic precautions; all instruments, dressings, hands of the operator, etc., should be clean.

Dr. K. Cameron, of Montreal, rèad a paper entitled "Infection by the Bacillus Pyocyaneus as a Cause of Infant Mortality," based on the observations of hsmself and Drs. Adami and E. P. Williams. It was not until 1889 that this bacillus was found to produce definite general infection in young children. The author drew the following conclusions:

1. That the infant tissues are susceptible to the invasion of this bacillus.

2. That the bacillus is distinctly pathogenic, setting up a disease peculiar to experimental pyocyanic disease.

3. That this disease is characterized by a train of very definite symptoms, such as diarrhœa, fever, rapid emaciation, rigidity of the legs and hæmorrhagic and bullous eruptions.

4. That the disease appears to be very fatal.

As this combination of symptoms occurs not infrequently in young children, especially when congregated in nurseries and foundling asylums, the author ventured to infer that a certain proportion of the deaths which now appear upon our records of vital statistics under the heading of gastro-enteritis, purpura, or marasmus, were in reality cases of generalized pyocyanic disease.

As to prophylaxis, he had nothing definite to offer at present beyond a strict observance of the laws of hygiene, fresh air, suitable nourishment and cleanliness; but he is inclined to consider that this disease is one eminently suited for a trial of serum therapeutics. It is a disease in which, experimentally, immunity can be easily produced in susceptible animals. This being so, it is probable that the serum of animals vaccinated against this disease, or sub-

stances obtained from such serum will be found, as in the case of diphtheria, to have curative effects.

The closing paper of the convention was read by Mr. J. W. Hughes, of Montreal. It was entitled "Evolutionary Development of Domestic Plumbing During the Past Twenty-five Years.

Several papers were read by title owing to the absence of the authors.

The following resolutions were offered, referred to the Executive Committee and adopted by the Association.

By C. O. Probst, of Columbus, Ohio:

Resolved, That this Association approves the suggestion for a co-operative investigation into the bacteriology of water, and commends the efforts of the committee in carrying out this work to the officers of the state and municipal boards of health, to the individual members of this Association and to all persons interested in the purity of water supplies for such special assistance as they may be able to render.

By Dr. E. R. Campbell, of Bellows Falls, Vt.:

Resolved, That this Association records its protest against the use of alcoholic liquor as a beverage, especially among the young, believing that such use is attended with great danger to the health, the individual and the society.

The Executive Committee failed to act on this resolution.

By Dr. George Homan, of St. Louis:

Whereas, It is the sense of this Association that the pollution of potable waters in America has reached such a point that the national governments should be asked to take cognizance of the matter with the view of devising means of prevention and relief; therefore be it

Resolved, That this Association memorialize the Congress of the United States and ask that they shall authorize the appointment of a competent commission clothed with power to fully investigate the whole subject of the pollution of rivers and lakes by municipal and manufacturing waste, and provided with sufficient means to enable them to conduct the examination in such a manner as shall be deemed best, the results of such examination to be published from time to time for the public information.

The following officers were elected for the ensuing year:

President—Dr. William Bailey, Louisville, Ky.

First Vice-President—Dr. G. P. Conn, Concord, N. H.

Second Vice-President—Dr. G. Mendizabal, Orizaba, Mexico.

Secretary—Dr. Irving A. Watson, Concord, N. H.

Treasurer—Dr. Henry D. Holton, Brattleboro, Vt.

After a vote of thanks, offered by Dr. A. L. Gihon, of Washington, D. C., the Association adjourned to meet in Denver, Col., at a time to be fixed by the Executive Committee.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, September 21st, 1894.

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

A Case of Symphysiotomy.—Dr. J. C. CAMERON presented a rachitic dwarf, upon whom he had recently performed this operation for the relief of convulsions. The patient was 26 years of age, height 4 ft. 6 in. and weighed 84 pounds. The conjugate was 6.8 cent. Delivery was accomplished fifteen minutes after the commencement of the operation, the child being alive and weighing four pounds. The stitches were removed on the eighth day, the union being perfect, there being no moving or riding of the bones. The woman was now brought before the Society for fear she might be lost sight of after leaving the hospital, but a full report of the case will be given at a later date.

Old Dislocation of the Hip-Joint Treated by Resection.—Dr. BELL presented a little girl aged six, who had suffered from spontaneous dislocation of the left hip-joint during an attack of scarlatina and had been treated six months later by excision of the head of the bone and clearing out the acetabulum. She contracted scarlatina in January, 1894, and was put to bed with her limbs in a perfectly normal condition. When convalescent in the month of February and without having met with any accident or presented any symptoms, it was observed that the leg was deformed and that she was unable to stand upon it or to use it. A physician was called (not the one who had diagnosed the scarlatina), who easily recognized a dislocation upon the dorsum of the ileum. Several attempts at reduction having failed, she was brought to the Royal Victoria Hospital in July, where she was chloroformed and unsuccessful attempts made at reduction. On the 17th of July the head

and neck of the bone were exposed by incision. One-third of the globular head was worn away where it lay upon the ileum above the brim of the acetabulum. The capsular ligament could not be recognized posteriorly and the acetabulum was practically obliterated with fibrous material. There was no ligamentum teres. The limb could not be sufficiently extended to replace the head in the acetabulum and extend the limb. The muscular resistance seemed to be general. (There was 1¾ inches of shortening with the limb brought down as well as possible.) There was no sign of inflammatory or other pathological change. The head of the bone was excised and the acetabulum cleared out, when the limb fell easily into position. The patient made an uninterrupted recovery, the wound healing by first intention. The limb remains in normal position. She has free movement in every direction and a good strong limb and there is half an inch of shortening, although from the tilting of the pelvis it seems greater.

Resection of the Intestines.—Dr. SHEPHERD exhibited two cases in which he had resected the bowel.

Case I.—This case was shown to the Society soon after operation three years ago, and she was now again brought before the Society in order to show in what a good condition she was. The resection was for stenosis following strangulated hernia, for which operation had been performed. At the time of operation the gut had looked suspicious, but was returned, more sloughing occurred and this was followed by the stenosis for which resection was performed. Several inches of the bowel had been removed and the cut ends sutured end to end by an inner row of interrupted silk sutures passing through muscular and mucous coats and an outer row of Lembert's sutures through the serous coat. The patient recovered well and when shown appeared in good health. Her age is 56.

Case II.—This was a case of resection of nine inches of small bowel in a woman aged 40. The bowel had been strangulated for five days and was found gangrenous at

the operation for the relief of the strangulation. As the patient's condition was fairly good, immediate resection was performed. The cut ends of the bowel were sutured by two rows of continuous sutures, the inner row passing through the mucous membrane and muscular coat and the outer, a continuous Lembert, through the serous coat. The hernia was an inguinal one, and after suturing the bowel a radical cure was performed by excising the sac and obliterating the inguinal canal. The patient got well without a bad symptom and the bowels moved naturally on the fifth day. She went out in four weeks perfectly well. It was now six weeks since the operation. Dr. Shepherd remarked that it was now his custom to use the continuous suture, and that he used no plates or other apparatus. The suturing of the bowel did not take very long, some twenty minutes. It was his experience that the divided mesentery gave most trouble on account of the hæmorrhage and its liability to tear. He was strongly of opinion that immediate resection was the best treatment in all cases of gangrenous hernia where the condition of the patient was good; in other cases it would be the better treatment to open the bowel and form an artificial anus, which could be closed by a subsequent operation.

A Case of Pylorectomy.—Dr. ARMSTRONG exhibited a woman from whom he had recently excised the pylorus. She came to the Montreal General Hospital on the 10th of May, 1894, complaining of a tumour situated in the right hypogastrium just below the seventh, eighth and ninth ribs, associated with pain and nausea after eating. Wishing to gain some accurate knowledge of her gastric condition, Dr. Armstrong sent her to the medical wards under the care of Dr. Lafleur, who made the necessary investigations.

Dr. LAFLEUR had first seen the patient in the out-door department, and under the impression that it was a case of malignant growth of the pyloric extremity of the stomach and of a kind suitable for operation, he sent her upstairs to Dr. Armstrong, who confirmed this view, but returned her to

the medical department for further information as to the functions of her stomach. Her history was as follows: In December, 1893, she began first to feel out of sorts, without, however, any definite stomach symptoms. In January, 1894, there was pain in the epigastrium after eating. February, 1894, the pain persisted, but was regularly relieved by an attack of vomiting coming on two hours after eating. She grew slowly weaker and by the end of the month had to take to bed. These conditions persisted during the following March and April, accompanied by a steadily progressive loss of flesh. She lost 37 pounds from the beginning of her illness until the date of her appearance at the out-door department of the hospital. She was a dark woman, much emaciated, but with her muscles still in fairly good condition. Examination of the respiratory, circulatory and urinary systems proved negative. The digestive symptoms were poor appetite, bad taste in the mouth, constipation, pain in the stomach and vomiting after meals. Physical signs as detected under examination in the ward were enlargement of the stomach, ascertained by means of the peristaltic waves observed to traverse from left to right. The boundaries were above, extending on a line with the ninth costal cartilages on both sides, and below, reaching as far as the umbilicus, typical hour-glass contractions of the stomach were at times noticed. There was a hard tumour about the size of a hen's egg, movable in every direction except downwards, and varying greatly in its situation. No contractions could be observed in this tumour and percussion gave a dull note. It was continuous with the funnel-shaped outline of the stomach. No nodules were observed. On May 19th a test breakfast, consisting of a small piece of bread and a cup of tea without milk or sugar, was given and withdrawn one hour afterwards. the examination of its contents revealed a complete absence of free hydrochloric acid, the gastric juice seemed effective, but lacked the presence of the acid. The want of this latter constituent seemed to be the chief abnormal feature. A few days later a second meal was administered, which confirmed

in every way the first. From a medical standpoint the chief interest in the case was the probability of its proving a suitable one for operation, owing to the complete absence of adhesions, as evidenced by the extreme mobility of the tumour and absence of all indication of involvement of the lympathic glands. The rule that abdominal tumours are always larger when exposed than they appear from external examination was contradicted in this case. There was no appreciable difference between its real size and that which we supposed it to be before opening the abdomen.

Dr. ARMSTRONG said that the patient having returned to the surgical ward, the question of surgical interference with all its attendant dangers was put before her to decide. So miserable was her condition that she preferred death to a continuance of life under such circumstances and gladly chose the risks of an operation. Before anæsthetizing her a hypodermic of morphia and atropia was administered, with a view to lessen the shock of the anæsthetic, and it had very satisfactory results. She took the ether quietly, there was no vomiting, and only 6½ ounces were used in the two hours she was under its influence. Her pulse, which was 100 at the start, fell to 70 before she left the table. A median incision was made and the tumour brought up to the opening. It was small and well defined, quite movable, non-adherent to surrounding organs, and there seemed to be no infiltration or involvement of any of the surrounding parts. It seemed a very suitable case for removal of the growth. The greater and lesser omenta were tied off, the pylorus drawn well up and the duodenum constricted by a soft rubber band at a point about 2½ inches from the pylorus. An incision was then made across the stomach well above the tumour, taking care to have it include all infiltrated tissue; and the duodenum was then cut across well below the tumour. A hole was then made in the posterior wall of the stomach and the duodenum united here, instead of the usual method of joining it to the head of the organ. In this way he was enabled to work right inside the stomach in the process of uniting the duo-

denum, which obviated many of the mechanical difficulties, and after joining it from the inside the stomach was turned over and the parts further united on the outside by a Lembert suture. The end of the stomach itself was then closed up, the edges being inverted, united, and the serous coats being finally joined by two rows of Lembert's sutures, Her recovery was as smooth as possible, there being neither pain nor vomiting. Solid food was first administered on the fifth day and she has been taking it ever since. She was last weighed about two months ago and had then gained ten pounds and has been increasing in weight ever since. She looks well nourished and says her appetite is good.

Dr. SHEPHERD congratulated Dr. Armstrong on the success of this extraordinary operation. It was, so far as he knew, the first of the kind ever performed in Canada, and was, without doubt, the first in Montreal. He had seen the patient after the operation, and looking at her now he must say he had never seen a case do better, which, when we consider the seriousness of the condition, is saying a great deal. He thought much of the rapid improvement may be attributed to the early feeding, as, in his opinion, the patients in many of the older cases owed their deaths to the starvation which was enforced. Dr. Armstrong's procedure in bringing the duodenum through a separate opening into the stomach is regarded as the only proper method by European surgeons.

Dr. RODDICK joined with Dr. Shepherd in congratulating Dr. Armstrong on his success in this case. Early feeding, without a doubt, contributes largely to the success of these cases.

Dr. JAMES BELL said that the trouble with these cases is the fact that most of them only submit to operation when they are practically moribund and when the disease has consequently made such progress as to render a cure under any circumstances almost hopeless. He had more than once opened the abdomen in cases of this kind only to find the disease so advanced that, unless for the relief of a

stricture or some such mechanical difficulty, an operation was unwarrantable.

An Appendix Containing an Ordinary Pin as the Exciting Cause of a Perforating Appendicitis.—Dr. BELL presented the specimen and gave history. The patient, a boy, aged six, had been brought to the Royal Victoria Hospital with the usual symptoms and signs of appendicitis with abscess formation. There was a history of two day's illness. The child was operated upon and made a good recovery. On slitting up the appendix a pin was found lying transversely across its lumen near the apex. The head of the pin had perforated (by ulceration) all the structures of the appendix, and the point of the pin had very nearly perforated at the opposite side, and at this point the appendix was strengthened by a mass of adherent omentum. This was the only case which Dr. Bell had seen with an actual foreign body as the exciting cause of the disease—except possibly a foreign body may have been the starting point of some of the enteroliths so frequently found in the appendix.

Calcareous Tumour of the Thyroid Producing Œsophageal Obstruction.—Dr. BELL showed the specimen and reported the case. An old lady, aged 58, had suffered for two years and a half from difficulty in swallowing, gradually growing worse until she was actually starving. Since March last she had not been able to swallow solids at all, and liquids only in very small quantities, and with the greatest difficulty. She was greatly emaciated and very weak. She was short of breath on excitation and also had one or two severe attacks of dyspœna. A small hard nodule was felt above the right sterno-clavicular articulation, and she stated that she had suffered from goitre when a young girl, but that it had gradually disappeared. The diagnosis was substernal calcareous thyroid tumour, and operation advised. Enucleation was not difficult and not attended with hæmorrhage, the patient made a rapid recovery and is now swallowing quite well. The tumour, which was about the

size of a hen's egg, was conical in shape and flattened against the sterum and sternal end of the clavicle. The apex had apparently pressed against the œsophagus. In structure it resembled one of the tarsal bones (excepting the articular surface) having a smooth outer surface resembling compact bony tissues, and cancellated structures internally. The operation was performed on the 13th of August last.

Tumour of the Prostate.—Two specimens were presented by Dr. BELL and brief histories given. The first was from a man, aged 58, who had suffered for ten years, with symptoms of prostatic obstruction. For the first six years he had suffered greatly, and in March last he had had a large calculus removed by lateral lithotomy, which gave a measure of relief, but this was only temporary. On examination several stones were found in the bladder and supra-pubic section was advised for the removal of the calculi, and subsequent prostatectomy if thought necessary or desirable. On section, five (5) smallish stones were removed and the projecting prostrate enucleated. Several deep sloughy ulcers were found, apparently due to the pressure of the calculi, and prostatectomy was decided upon. Only the projecting part of the prostate was removed by enucleation, and the patient made an excellent recovery. He is now perfectly well, has good bladder function (although there is some residual urine), and is quite free from pain and frequent desire to micturate.

The second case was an old, decrepit man of 68, who had suffered for a great many years, but for the past year his sufferings had been so great that he declared that life was intolerable unless he could be relieved. His urine showed no evidence of kidney disease, and after due preparation the prostate was enucleated by the suprapubic route. The points of interest were—the great ease with which the bladder gland was enucleated in its entirety, (making an unique specimen) very rapidly, and without hæmorrhage or shock. On the third day the patient began to grow dull and stupid

and died on the fourth day toxæmic. At the autopsy a few spots of very recent lobular pneumonia were found in the left lung, but the organs were otherwise healthy. The bladder was also presented, showing the capsule from which the prostate had been removed. Urine had flowed freely from the bladder wound, showing that there was no arrest of kidney function. In both these cases the after treatment consisted in irrigation every three hours with boro-salicylic solution through a catheter introduced into the bladder by the penis, the out-flow being through the bladder wound. Dr. Bell expressed the opinion that the operation of the future would be enucleation from the perineal side, and that this could best be carried out by means of combined supra-pubic and perineal incisions.

Dr. SHEPHERD had a somewhat similar case to the first within the past few months. A man came from the country who had been sounded many times for stone without success. Dr. Shepherd was also unsuccessful until he examined him under ether. There was no sensible enlargement of the prostate. A supra-pubic section was made, and two very rough stones were found lying in the bladder. Wherever they had come in contact with the bladder wall a sloughing ulceration had taken place. He treated the ulcers with caustic without interfering further with the prostate. This was the first time that he had ever seen such a condition of the bladder in connection with stone; but it may be that they are more frequent than we think, as it is not possible to see them during the lateral operation, even when looked for.

Dr. RODDICK believed in removing the prostate by a perineal opening. He had removed diseased glands on two or three occasions by this method, and was surprised how easy it was to shell them out. He had no doubt that it would in time become the standard method of removing the prostate.

Dr. ARMSTRONG had recently seen Prof. McKeown, of Glasgow, remove a prostate, and had a talk with him on

the subject afterwards. Some time after the Leeds meeting of the British Medical Association the professor had discarded the perineal method and adopted the supra-pubic, as there advised. His results, however, were exceedingly bad. One after another of his patients died of toxæmia and hæmorrhage, until he finally went back to the perineal method, which plan he now almost without exception adopts. Sometimes when only one lobe is enlarged, he will remove it through a lateral incision. In the perineum, he exposes the prostate by a U shaped incision, and enucleates it without opening the mucous membrane of the bladder. In this way he avoids toxic troubles and can control hæmorrhage by packing. It seems very desirable that we should get some better method in prostate surgery than the supra-pubic one, and we would then be in a position to relieve a large class of people who now suffer from prostate disease in its last stage.

Dr. BELL often supplemented his supra-pubic incisions by a perineal drain. This in many instances did not appear to cause any improvement in the results, and he found it hard to believe that the difference between the two methods can be so very great. Again it is often very difficult to enucleate by the perineal method without injuring the mucous membrane of the bladder over the prostate. His idea of late has been a double incision—supra-pubic and perineal—so that instead of enucleating from the bladder only, one could enucleate from the perineum with the fingers in the bladder as an aid and guide to the performance.

Four Calculi Weighing 5 ounces 1 drachm Removed from the Bladder.—Dr. RODDICK exhibited four remarkable calculi, removed from a man, 65 years of age, who had been for four or five years suffering from bladder symptoms. During that time he had been several times sounded for stone, the last occasion being not more than three months ago, but without any signs of such a condition ever being detected. Enlarged prostate with symptoms arising there-

from was looked upon as his disease. Dr. Roddick, on examination, succeeded in diagnosing the presence of a fairly large stone, the size of which, in fact, made him conclude it was the only one. The existence of an enlarged prostate, and the unhealthy condition of the bladder, decided him to choose the supra-pubic method. On making his incision, a large stone presented in the wound, which on being removed was succeeded by another, and so on until four large ones were removed, weighing in the order of their size 37, 38, 39 and 50 grammes respectively. Two of them must certainly be looked upon as very large, and considering the combined size as well as the circumstances of the history, the case is altogether a very remarkable one. The failure of the previous surgeons to detect stone by sounding is explained by the fact that the calculi were all lying in a distinct sac, or pocket of the bladder; the examinations no doubt were made with the bladder empty, and its mucous membrane folding itself over the stones, deadened the touch of the sound.

Cases of Cholecystotomy.—Dr. SHEPHERD reported two cases performed during the last six weeks. In the first case the patient was a woman and aged 36 years. For two years she had suffered much pain about the right hypochondriac region, the first attack of pain being accompanied by profuse jaundice, which lasted several months and then disappeared. There was always a pain of a dull character in the region of the gall bladder. In February last she had a severe attack of pain, high temperature, rigors, and rapidly became jaundiced. In July, she noticed a tumour to the right of the umbilicus; it was painful and seemed to increase slowly in size up to the time of her entrance into the hospital. All this time she was deeply jaundiced, her urine was dark in colour and her stools were colorless. On examining her, it was noticed that she was very thin and deeply jaundiced. She complained of dull aching pain in the right hypochondrium; had continuous nausea, was feverish at night and often suffered from chills. On ex-

amining her abdomen a round, smooth tumour was felt to the right and below the umbilicus ; this was dull on percussion, the dulness being continuous with that of the liver. The tumour was about the size of a small cocoa-nut, elastic and freely movable. Dr. Lafleur examined the case and looked upon it as a case of enlarged gall-bladder. The operation was performed on August 30th, and the tumour was found to be a largely distended gall-bladder projecting beyond a " lacing lobe " of the liver ; it was opened and about a pint of thick bile evacuated. A few small stones were found in the gall-bladder, but the cystic duct was not dilated. On examining further, two large stones were found in the common duct, and these were soft and could not be broken up by needle or padded forceps, so the gall-bladder was sutured to the abdominal wound and a glass drain inserted. Patient has gone on perfectly well ever since, large quantities of bile being discharged through the tube into a rubber bag which is attached to it. The patient is up and about and eats well. The jaundice has almost disappeared, but unless something more be done, she will have a permanent fistula discharging bile. Dr. Shepherd said that if the fistula persisted, it was his intention to do a further operation, viz., to re-open the wound and perform a cholecystenterostomy, and then close the present opening in the gall-bladder. In making a communication between the gall-bladder and intestine, it was his intention to make use of the Murphy button.

In the second case there had been severe attacks of pain with jaundice and high temperature for more than a year. The patient was a woman, aged 36, who was somewhat stout. Dr. Shepherd saw her in the last attack and advised her removal to hospital. She had a temperature of 103°—4°, with great tenderness and pain in right hypochondrium and she was intensely jaundiced. She improved immediately on admission to hospital, the jaundice rapidly disappearing. No stones were found in her stools. Although the pain had disappeared there was a point of great tenderness in

the region of the gall-bladder. At her request operation was performed on September 7th to prevent further attacks. An incision was made in the left semilunar line and the gall-bladder searched for; it was hidden by adhesions and situated deeply down beneath a high-placed liver. On opening it a small quantity of bile escaped, and six gall stones the size of marbles were removed; the common duct was free. The gall-bladder could not be brought up to the surface, so a glass drain was introduced and the cavity packed round with iodoform gauze. The wound was closed by three layers of sutures. The patient went on very well. The gauze was removed on the second day and replaced, but a day or two after a severe iodoform rash appeared, so the sterilized gauze was substituted for the iodoform. The tube was removed on the tenth day, the amount of bile coming away having very much diminished. She is now going on well, sitting up and going out. The fistula is rapidly closing, a very small quantity of bile being now discharged.

Dr. BELL also reported a case of obstructive jaundice in which the symptoms pointed to obstruction in the common duct. A woman aged 50 had suffered from pain and disturbance about the right hypochondrium for about eight months. Since March last she had suffered from paroxysmal attacks of pain with some vomiting followed by jaundice, which, although diminishing in the intervals, never entirely disappeared. Later on she had chills and the jaundice became persistent, increasing with each attack.

Diagnosis—Obstruction in common bile duct from gallstone, or possibly malignant disease.

Operation July 23rd—Incision in right linea semilunaris. Firm, old adhesions made it very difficult to expose the under surface of the liver, so that it became necessary to make a transverse incision from the upper extremity of the vertical one inwards nearly to the median line. The liver was shrunken and retracted beneath the

ribs. The gall-bladder contained no fluid and was contracted upon a stone which lay in the entrance to the cystic duct and was as large as a filbert. Nothing could be detected in the common duct, but a chain of enlarged lymphatic glands were felt in the hepatic fissure. The gall-bladder was incised and the stone removed. A probe forced down the duct failed to enter the bowel. He did not feel that he had removed the cause of the trouble, but being unable to locate any obstruction elsewhere in the biliary passages he could do nothing further. As it was utterly impossible to suture the wound in the gall-bladder, which lay far back and high up underneath the ribs, to the peritoneum lining the abdominal walls, or in any other way establish a natural conduit for the outflow of bile, the wound was closed with sutures, the ends of which were brought up through the abominal wall to fix it in position. Although there was no flow of bile during the operation it was not thought probable that the wound in the gall-bladder would remain closed, especially as it was impossible to apply Lembert sutures, owing to the fragility of its peritoneal covering. A glass drain was carried down to the line of sutures in the gall-bladder and carefully packed around with iodoform gauze—the idea being that the sutures would probably keep the gall-bladder closed for a couple of days until the track of the drainage tube would become closed off from the general peritoneal cavity by adhesions. This was evidently successful, as there was no biliary discharge from the tube for five days, when bile began to flow in great quantities. The jaundice then began to disappear, but the stools remained colourless and covered with oil globules. Bile continued to flow in large quantities until the 12th of August (20 days after operation), when it rapidly diminished and the stools became normal in colour. Nine days later (August 21st) the wound was perfectly healed, the jaundice gone and the digestive functions normal and the patient was discharged.

The post-operative history of this patient I think, supplies the missing link in the diagnosis. When we remem-

ber that the gall-bladder was empty at the time of operation, that there was a chain of swollen lympathic glands along the line of the hepatic duct, that bile began to flow from the wound five days after operation and that it ceased to flow through the wound and began to flow through the common duct 20 days after operation, it seems pretty clear that obstruction was due to pressure from the enlarged glands from without and that when the exciting cause was removed and the swelling disappeared from the glands the symptoms all subsided. Dr. Bell knew of no similar case recorded.

Dr. RODDICK in April, 1892, had a case of cholecystotomy which he thought worthy of recording, especially so, since he was under the impression it was the first operation of the kind performed in Montreal. A lady, 64 years of age, had been jaundiced for nearly one year, accompanied by pain, etc., and her symptoms had gradually become much worse. Examination revealed a distinct tumour, which had all the signs of being a distended gall bladder. An incision confirmed this fact, an enormously distended gall-bladder being found, containing about one pint of thick treacly looking bile. A conical shaped stone, about the size of a filbert, was found blocking the cystic duct ; and along the line of the common duct a distinct thickening was felt, but whether of a simple or malignant character could not be ascertained. The size of the gall-bladder made it an easy matter to bring it up to the abdominal wound and suture it there, a drainage tube being inserted for the escape of the bile. A few days after the operation, the jaundice disappeared, showing that the common duct, to a certain extent at all events, was patent. Jaundice, however, returned after a time, and in a more aggravated form. Bile continued to flow through the abdominal wound for nearly three months, sometimes very little, and sometimes very much, the fistula, however, never permanently closing or being healed. Finally the woman died of a pneumonia, which was very likely the result of her condition. The

operation here was made a very simple one, owing to the gall-bladder being so large and easily handled.

Dr. LAFLEUR wished to say a few words with reference to the innocuousness of bile in the peritoneal cavity. It is hard to say when the bile is septic and when not. In regard to the first case mentioned by Dr. Shepherd, he thought a diagnosis of the condition could be positively made from the physical signs. The character of the tumour was clear, because the area of dulness on either side was quite continuous with the liver dullness, an absolutely flat note being elicited from the lower border of the tumour right up to the liver. If it had been renal, as Dr. Shepherd suggested, there would be some interspace between the tumour and the liver with a lighter note. Then the feel of the tumour was too elastic for a solid growth.

Dr. ARMSTRONG said that Dr. Roddick's case recalled to his mind one of his own attended with somewhat similar difficulties. The woman went home after the operation with the bile flowing through a fistulous opening in her abdomen. After an absence of six months she returned with the bile still flowing, but with her stools pretty well coloured. Dr. Armstrong then made some attempts to stop the escape of the bile by means of cotton wool plugs and collodion. A second effort in this respect was successful, and after remaining here six weeks without any sign of the flow breaking out again, she went home. The fistula eventually closed up.

THE OPHTHALMOLOGICAL CONGRESS.

The eighth International Ophthalmological Congress is now a thing of the past, and the many attending ophthalmists have turned their backs on the modern northern Athens, after what they one and all have acknowledged to be a most enjoyable and also instructive visit.

The congress was held in the physiology lecture theatre of the new university building, while the demonstrators rooms were utilized for the microscopical and instrumental exhibits.

The congress was opened on Tuesday morning, August 7th, Dr. Argyll Robertson, of Edinburgh, being chosen president in room of the late Professor Douders, whose death had occurred since the last meeting.

In a brilliant address Dr. Robertson welcomed the hundred and sixty-three visiting members, dwelling shortly on the attractions of Edinburgh, on the university, with its many illustrious names—Goodsir, Bennett, Syme, Christison, etc.—then passing on to the strides made in ophthalmology since the first meeting of the congress thirty-seven years ago, and finally urging all to push on and not prove traitors to their noble leaders, Graefe, Donders and Bowman.

The election of officers followed, Swanzy, of Dublin, and Power, of London, being elected vice-presidents, and G. A. Berry general secretary.

Lord Provost Russell (who, by the way, is a medical man) then in a hearty address welcomed the members of the congress, and after this the congress settled down to practical business.

Snellen, of Utrecht, opened with a paper on the subconjunctival treatment of operative and traumatic wounds of the cornea and sclerotic; Knapp, of New York, offered remarks on cataract extraction based on a recent series of

six hundred successive cases; Dr. Priestley Smith spoke of scleral puncture as an adjunct to iridectomy in the treatment of glaucoma; Leber, of Heidelberg, discussed injuries to the eyes caused by copper chips; Professor Panas, Paris, made a communication on the traumatic paralysis of the motor nerves of the eye; Mules read two papers, one on a new operation for ptosis, and the other on treatment for the immediate cure of corneal ulcers; and Professor Pflüger, of Berne, treated of the drainage of the eyes.

The congress then rose, it being 1 o'clock. In the afternoon the members were taken to Holyrood and the castle. In the evening the Lord Provost gave a very brilliant conversazione in the Museum of Science and Art—fully three thousand invitations were issued. The military bands supplied excellent music.

On the morning of the 8th the sittings were resumed at 9 o'clock. The first portion of the business consisted in the description of various specimens shown in an adjacent room by members.

Dr. Dimmer, of Vienna, treated of albuminuric retinitis, with specimens. Dr. Juler, of London, demonstrated the existence of a dilator muscle of the iris immediately beneath its posterior epithelium, which he considered would be of considerable interest in physiology and perhaps in the pathology of glaucoma.

Franke, of Hamburg, showed some fine sections of the histological changes which accompany the healing of perforating wounds of the sclerotic.

Dr. Gustav Mann, of Edinburgh, gave without doubt one of the most exquisite exhibits as a lantern demonstration on the alteration in cells of the visual centres produced by exposure of eyes to light. His demonstration illustrated the result of experiments on the brains and retinæ of rabbits and dogs, certain of which experiments had to be carried out in Germany, as he could not obtain the necessary license in Britain. He concluded from his experiments that during rest the cells stored up an amount of chromatin,

which was used up when the cells were stimulated to functional activity, and that along with this chemical change there was a definite visible change in the cells, consisting in the enlargement of the cell and nucleus, if the functional activity were not excessive; the sections exhibited showed this.

The various papers were next read, subjects being grouped as far as possible.

Abadie, of Paris, read an article on choroido-retinitis; Gunn, of London, followed with a communication on changes in the macula associated with retinal inflammation and œdema. Benson, of Dublin, described a case of recurring and very transient visual obstructions, which he considered to be of the nature of an angioneurosis. Viau, of Toulon, spoke of the treatment of ocular diphtheria with crude petroleum. George Bull, of Paris, gave a paper on lid pressure on the cornea causing asthenopia. This gave rise to free debate. Roosa thought strain on the ciliary muscles was the cause of asthenopia. Swan Burnett said he found lid pressure gave rise to pronounced astigmatism. Savage, of Nashville, held that it was extra effort on the part of the inferior recti and superior oblique which was at the bottom of this asthenopia.

After this the sederunt closed and the whole congress was photographed in front of the Royal Infirmary. Drives to Craig Millar Castle and a garden party at the Lord Provost's filled in the afternoon.

The Royal College of Surgeons gave a dinner and after it the President and Mrs. Argyle Robertson gave a brilliant reception at their house in Charlotte square.

The third day of the session was the great one on muscular eye troubles. Landolt led off with a paper on strabotomy, in which he gave, as the result of twenty years' practice, his entire allegiance to muscular advancement rather than setting back in cases of strabismus. He aimed not alone at parallelism of the eyes, but also binocular vision, and this all over the field. He held that by

advancing the muscle the movement of the eye was increased, and thus the advancement was capable of curing the squint in every direction.

Swanzy, of Dublin, would not disregard the tenotomy to the same extent as Landolt, but he considered the advancement, accompanied by tenotomy, as valuable in extreme cases of squint.

Roosa, of New York, spoke in the same strain as Mr. Swanzy, as did also Dr. Noyes.

Gruening, of New York, said he tried to tenotomize invariably rather than advance a muscle, using a pulley stitch in addition sometimes.

Stevens, of New York, spoke of equal rotations of the eyes as being the great desideratum, and held that this could not be obtained by advancement, which indeed restricted them.

Landolt, in reply, said the criticisms of his colleagues proved to him that they did not follow up their cases in the same manner that he did, otherwise he was sure they would have the same results.

Thier, of Aix-la-Chapelle, and Fukala, of Pilsen, submitted contributions on the operative treatment of high myopia.

In the afternoon a visit was paid to the Forth bridge, and in the evening the Royal College of Physicians gave a large conversazione, which wound up with a highland reel to the skirl of the bagpipes by some of the younger Scotch members.

On Friday, August 11, the final meeting of the congress took place. Dr. Lyder Borthen, of Drontheim, explained a series of drawings of leprous diseases of the eye, which were beautifully executed. He said 80 per cent. of all lepers had their eyes affected.

McHardy, of London, held forth on the artificial maturation of cataracts by iridectomy and trituration of the lens through the cornea, results being equally as good as in senile cataracts which had been left alone to ripen.

Dr. Noyes held it was only necessary to iridectomize in children where the lens was soft.

Nieden, of Bochum, described a case of sympathetic ophthalmia following sarcoma of the choroid.

Theobald, of Baltimore, read a paper on radical cure of strictures of the lachrymal duct, urging the use of large probes. Quite a debate followed, there being a majority against the use of very large probes.

Dr. Stolting, of Hanover, then spoke on the cure of hydrophthalmia, and Malgat, of Nice, on the treatment of palpebral granulations.

Drs. Savage, Risley and Stevens closed the sitting with communications on the optics of astigmatism.

The next place of meeting was chosen to be Utrecht in 1900.

Dr. Noyes, of New York, then proposed a hearty vote of thanks to the university authorities, and also the Royal Colleges of Physicians and Surgeons. Sir William Muir, principal of the university, responded.

In the evening the congress dinner took place; about a hundred and fifty ladies and gentlemen were present.

Thus the eighth congress ended.

The Edinburgh folk, both professional and other, did their best most successfully to entertain the guests, and junketing was the order of the day after the morning was got through. The visitors were elected honorary members of the University Club and Union for the duration of their stay. Never did classic Edinburgh look fairer or more romantic than during this first week of August.

The recollections of the congress and its accompaniments will long linger in our mind as a fragrant memory of bygone days.

EDINBURGH, August 12, 1894.

THE

Montreal Medical Journal.

VOL. XXIII. OCTOBER, 1894. No. 4.

AMERICAN PUBLIC HEALTH ASSOCIATION.

The meeting of the American Public Health Association held in Montreal last month has been a very successful one, both from a social and scientific standpoint, thanks to the untiring efforts of the local committee, the liberal subrcriptions from the government and from private individuals.

The visit to Grosse Isle quarantine will, we hope, satisfy the visitors that it is easier for a camel to pass through the eye of a needle than for a cholera germ to enter the Dominion of Canada, and we may feel assured of escaping in the future from the vexatious and not altogether necessary surveillance which has been in the past exercised over Canada by the United States in times of threatened epidemics. If it is found necessary in the future to "watch Canada" it will probably be with a view of learning from her the most improved quarantine methods and adopting them.

The scientific meetings were full of interest. The papers and discussions, while being of direct practical interest to those engaged in scientific work, were largely such as could be understood and appreciated by the general public. Special prominence was given to the subject of water pollution and water filtration, hygiene of the young in schools, car sanitation.

The reports of the standing committees were numerous and carefully prepared, showing a good organization on the part of the executive, and the plan adopted by the committee on water supply pollution for the co-operative study of the water bacteria will be watched with much interest.

The next meeting will be held at Denver, Colorado, under the president-elect, Dr. Bailey, of Kentucky, in the autumn of 1895.

Good effects in the shape of a sanitary revival may be anticipated in our city and province as a result of this meeting, and it might be well if courses of free public lectures on sanitary topics could be given in Montreal during the coming winter before the stimulating effect of the meeting has passed away.

A POST-GRADUATE COURSE IN MONTREAL.

From time to time it is the pleasant duty of those connected with the hospital staffs to welcome visiting doctors, many of whom are graduates of our own universities, possibly classmates not seen for years and almost forgotten. It is a great pleasure to show the improvements in building, nursing and methods, and many times while doing so, the thought has struck us why should not Montreal, with her hospital facilities and wealth of clinical material have a post-graduate course, to which could come our brethren who have not the opportunities for keeping abreast of the times afforded by residence in a large city with its medical societies and other advantages.

When a visiting physician comes here during the session, he finds that he is a supernumerary, everything in the way of teaching being for the benefit of the students from the medical colleges; he is shown the interesting cases, but has no opportunities for study unless he enters on the same footing as an undergraduate, and that, in the vast majority of cases, will not suit him, as he wishes to take up certain branches only in which he feels that he is not so well up as he ought to be, both in clinical and classroom subjects.

At present such a one has to go to New York or across the ocean to obtain what might be furnished to him just as well at home. We are quite aware that there are difficulties in the way of arranging such a course, but it is wanted in Canada and must come before long. A course lasting say four weeks, arranged on a plan similar to the summer session, would do for a beginning, to be improved upon in the course of time.

This would mean more work for the teachers, who have already a heavy burden to carry, but such a course would be a great gain to Montreal and her universities, and when found practicable we feel sure that the extra labour will not be grudged, but that all working together cheerfully and willingly, success will be achieved.

THE DIPHTHERITIC ANTITOXINE.

Since Koch's announcement of the discovery of tuberculine no subject has excited more universal interest in the medical and bacteriological world than the antitoxic treatment of diphtheria, yet the principles on which it is based have antedated the discovery by many years. It was Carl Fraenkel who first performed experimental vaccination with the diphtheritic toxine, and since that time the methods have been numerous and in many cases prolific of the most brilliant results.

Although the exact nature of the diphtheritic poison is as yet not clearly understood, nevertheless for some time past it has been known to present characters analogous to the enzymes—ferments produced in the human body—and some authorities, such as Sidney Martin, place the poison in very close relationship to that class of substances.

The poison is readily obtained artificially by various methods from pure concentrated cultures of the diphtheria bacilli, the safest means being by filtration, inasmuch as heat alters the chemical nature of the poison and renders it inactive. Fraenkel, who first rendered animals immune, based his experiments on the theory that if the poison be the active principle, one must merely accustom the animal to the poison. He obtained the toxine, heated it up to 65° C., thereby modifying it, and injected it into the animals without producing fatal results. After two weeks he repeated the injections and continued thus till he considered his vaccination complete. He then inoculated poisonous doses of the toxine with impunity and further found that after a certain time his animals resisted fatal doses of the pure culture.

The greatest care is necessary in repeating an inoculation,

inasmuch as animals after a primary injection are for a time far more susceptible than previously.

The serum from animals that have been thus rendered immune is found to have special properties, preventive, antitoxic and therapeutic, and has been employed against diphtheria by various methods and with varying results.

Some animals are refractory to the germ of diphtheria, and it was formerly believed that the serum of such was in itself antitoxic; this has in recent times been proved absolutely false, vaccination by the toxine being essential in all cases for the production of antitoxic serum.

In the administration of the toxine to animals Behring combined the toxine with various reagents, preferring trichloride of iodine, while at Paris M. Roux employs gram's fluid with equally brilliant, if not even better, results, and finds that only a few days interval is necessary between the first and second injections.

Dogs, goats, cows, sheep and horses can be thus immunized, some authorities preferring one animal, some another. It may be said in general that the larger the animal and the less susceptible it be, the more suitable it is for inoculation purposes, inasmuch as thereby more serum is obtained and the toxine can be injected with greater impunity. At the Institut Pasteur the horse is employed, M. Roux having succeeded only after several years' labour in completely and satisfactorily immunizing the animal.

Aronnson, whose antitoxine has now become procurable, obtained the serum from dogs rendered immune. He precipitates the antitoxine of the serum with sulphate of aluminum, after adding ammonia, and then washes the precipitate with a solution of carbonate of soda and places it in small phials for sale. Its activity is doubted and its strength apparently much less than many other serums.

Serum from the horse which has been rendered immune is likewise readily obtained. It must be collected pure and is best kept in sterilized vessels with a small crystal of thymic

acid. The strength of that employed in Paris is such that one milligram will vaccinate a guinea-pig of 500 grms. in weight.

A serum is called active when one part by weight will vaccinate an animal weighing 500 times that amount, though much depends on the time of treatment, the amount of toxine and other conditions.

Injections are usually made into the peritoneal cavity, and the greatest essential is the early treatment of the case. Under favourable conditions the effect is rapid and marvellous. The temperature is modified, the membrane detached and the general symptoms greatly improved.

Statistics of cases treated by M. Roux at the Hôpital des Enfants Malades in Paris, show that of 275 cases treated there were but 65 deaths, *i.e.*, a percentage of 76.4 recovered. Further, upon 107 of these tracheotomy had been performed, and nevertheless 56 per cent. were cured, whereas of the 168 children in whom only the angina was present and the serum alone was employed without operative interference, 89.2 per cent. recovered. It may be added that of the above cases none were treated till the Klebs-Lœffler bacillus was found. It will be thus seen what a future presents itself for this new and scientific mode of treatment and it is to be hoped that soon every opportunity will be afforded the various hospitals and practitioners to employ this new agent without the present enormous outlay which would be required for even a single ward full of patients.

TESTIMONIAL TO SIR JOSEPH LISTER.

Sir Joseph Lister having recently retired from active hospital and teaching work, the occasion has been thought appropriate for presenting him with a testimonial of the esteem in which he is held by his former colleagues and pupils, and committees have, therefore, been formed in Glasgow, Edinburgh, and London for the purpose of raising the necessary funds.

It is proposed that the testimonial shall take the form of a portrait. Subscriptions have been limited to two guineas, and it is hoped that sufficient funds will be collected to permit of

some memento of the occasion being presented to each subscriber of that amount.

As there are probably many surgeons in Canada who may wish to join in the movement, but whose names and exact addresses it has been difficult to ascertain, I should be glad if you would permit me to state that subscriptions may be sent to me at 29 Weymouth street, Portland Place, London, W., England, or to one or other of the following gentlemen who have kindly consented to act as treasurers, viz. : Dr. James Finlayson, 4 Woodside Place, Glasgow ; Prof. Chiene, 26 Charlotte Square, Edinburgh ; Prof. William Rose, 17 Harley street, London W., England ; Dr. Malloch, 124 James street, South, Hamilton, Ont. ; or Mr. J. Stewart, M.B.. Pictou, Nova Scotia.

I have the honour to remain, Sir,

Yours faithfully,

J. Fredk. W. Silk,

Honorary Secretary.

P.S.—Two guineas are about $10.23.

Obituary.

OLIVER WENDELL HOLMES.

The Autocrat has passed away at his residence at Beverley Farm, on October 7th, and the world is poorer for his loss. He was born at Cambridge, Mass., on August 26th, 1809. He graduated from Harvard in 1829, and commenced the study of law, but soon abandoned that for the more congenial study of medicine. He commenced the practice of his profession in Boston in 1836, and in 1838 was appointed professor of Anatomy and Physiology in Dartmouth College. This he resigned in 1847 to accept a similar position in the Massachusetts Medical School, from which he retired in 1882. But it is as a writer that he is best known the world over. As early as 1836 his poems appeared in various periodicals, and as a writer of songs and verses for festive occasions he was unsurpassed. In 1857 his "Autocrat of the Breakfast Table," appeared as a series of articles in the *Atlantic Monthly*, followed three months later by "The Professor at the Breakfast Table," and in 1872 by "The Poet at the Breakfast Table." His works, however, make too long a list to mention here. Collections of his poems have appeared from time to time, the last in 1889. Bssides his literary efforts, he contributed largely to current medical literature. His greatest contribution to medicine was the discovery of the fact that puerperal fever is contagious, and this he maintained for years in the face of opposition and ridicule.

For thirty-five years he laboured at the Harvard Medical School, teaching at the one time anatomy, physiology and histology until 1871, when he became professor of anatomy alone. He used to say that he occupied not a *chair* but a *settee* of medicine in the school. He did much for his Alma Mater and it can truly be said of him that the world is better for his having lived.

Medical Items.

To Abolish the Office of Coroner.—The Constitutional Convention now in session for the State of New York has voted to strike out the office of coroner as a constitutional position by a vote of ayes 97, nays 43. This is one step in the direction of giving to New York a system of medico-legal experts such as has been adopted by Massachusetts for many years. The ratification of the action of the convention must be obtained at the polls by the general vote of the people of the State. There seems to be a strong presumption that the revised constitution will be adopted. —*Journal of American Medical Association.*

Transfusion of Blood in its Legal Aspects.—Our Paris letter of June 23rd contained a report of an interesting trial that had taken place in France. It being necessary to resort to transfusion in a desperate case of illness, the servant of the patient volunteered, or consented, to supply the blood. Some time afterward the giver fell sick, and, attributing his disease to the sacrifice he had made for his master, sued the latter for 60,000 francs damages. Experts were appointed to examine and report on the case, but in the interval the plaintiff died. The action was continued by the widow at the Civil Tribunal of the Seine, where the court gave judgment for the defendant. The decision was obviously equitable if, as we assume, compensation was claimed simply on the ground that the illness resulted from the operation and from the effects of the loss of blood. When a person is asked to furnish blood for the purpose of transfusion it is the duty of the receiver, by himself or agent, to state precisely the possible dangers attending venesection, and to insure that reasonable care is taken to prevent untoward consequences, that is, the wound should be made under strict antiseptic precautions, and the patient

skilfully attended until it has soundly healed. Of course, a person could stipulate that he should be remunerated for the loss of employment during enforced idleness and compensated for incapacity arising from an unforeseen accident attendant on the operation, but, failing this, he has neither the moral right nor legal title to recover a money equivalent. His voluntary act of self-sacrifice is a tribute to humanity and should not be used as a lever to procure self-aggrandisement. In the case under consideration the man died from cancer of the stomach, certainly not caused, and probably not aggravated, by abstraction of a few ounces of blood.—*London Lancet.*

—The "Canadian Medical Literature" has been omitted this month on account of lack of space.

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The volume commences with the July number, but subscriptions may begin at any time.

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THE MONTREAL MEDICAL JOURNAL CO.,
Care of GAZETTE PRINTING CO.,
MONTREAL

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXIII. NOVEMBER, 1894. No. 5.

Original Communications.

MODERN DIFFICULTIES IN BACTERIOLOGICAL DIAGNOSIS.*

By J. G. ADAMI, M.A., M.D., M.R.C.S.,
Professor of Pathology in McGill University, Montreal.

At a time when in the popular estimation bacteriology is showing itself to be of greater and ever greater import not only in matters of health and disease, but also in the very commonest commercial relations of every-day life, and when the world in general seems to be becoming rapidly convinced that the microbe is at the bottom of everything ; when, in fact, bacteriology has already made an ample apology for its existence, it is, I think, well that occasionally one of us, not from a sceptical spirit, but because of the very strength of his belief in the importance of his science, more especially in its relationship to public health, should pause, and should, as a bacteriologist, point out that matters are not quite so settled, that in fact everything is not quite so surely established as in the opinion of very many it would seem to be.

Taking into account the extraordinarily large accumulation of facts that we now have concerning the bacteria, it is wonderful to think that to all intents and purposes the advance of bacteriology has been synchronous with the

* A communication presented to the Montreal meeting of the American Public Health Association, September, 1894.

scientific lifetime of so young a man as I am. There is scarce one present here but can remember the days of ample doubt as to the pathogenic properties of any of the bacteria ; scarce one but can remember the time when Pasteur's wonderful series of observations upon anthrax and the bacillus of anthrax hardly received credence. From that period one saw passing days of gradually lessening doubt, until Koch's wonderful investigations into the bacillus of tuberculosis made men rush to the other extreme, made them absolutely sure that whether the microbe was discovered or no, specific microbe exists for every febrile disease, and for a great number of non-febrile diseases. Now, at the present time, there is among bacteriologists, among those deeply read and acquainted with the subject, as it were a backward swing of the pendulum, to a certain extent. What I mean is that, largely through the teaching of the German school of bacteriologists we had, but a few years ago, come to look upon every disease in which a definite microbe had been discovered, as being due to the presence within the organism of some microbe whose characteristics were absolutely sharply-defined. There was, for example, an absolutely specific microbe of cholera, possessing constant properties, constant peculiarities of growth on various media and constant chemical reactions of part of its products, with constant development of special ferments. There was a sharply-defined diplococcus of pneumonia, a bacillus of typhoid that could not be confounded with any other microbe. And so on with regard to all the important diseases whose germ has been discovered.

Well, I do not wish now to say that this is false ; all that I wish to do in this short paper is to impress upon you the advisability of crying " Halt " before we unreservedly stand to this belief, and it is of especial importance to the members of this Association that the advisability of deliberating long and carefully should be kept in mind ; inasmuch as it is just in relation to some of the most wide-

spread and epidemical microbes that we have at the present moment the greatest difficulty in regard to the exact bacteriological diagnosis. That these microbes, by their presence and growth in the system, causes disease no sane [and competent bacteriologist has the smallest doubt, but we have before us in relation to typhoid, cholera and diphtheria, not to mention other cases, a series of problems that are as yet unsettled. The right solution of these problems is, from the point of view of the public health officer, of vital importance. As yet I cannot regard these problems as having been fully solved or nearly solved; and in this view I believe I shall have the support of my fellow-bacteriologists.

The main problem before us at the present time is in relation to the determination of species. Are we to conclude that there are, it may be, several closely allied species which are capable of inducing the main symptoms of any given disease, or are we to regard the several slightly divergent forms which may be gained from different cases of what clinically we recognize as a single disease as but varieties or races of one species which have obtained more or less permanent characters setting them off from the type? What, in short, are we to regard as the limits of variability? Apart from a constant recurrence to experimental inoculation (which is not always possible) how are we surely to recognize the pathogenic nature of the form we isolate from cases of disease?

Take, for instance, what is found in connection with typhoid; no one in our days, who has made actual observations, has the slightest doubt as to the cause of that disease; every one is agreed that it is due to a bacillus, having, on the whole, well defined characters, if once we obtain the baccillus from the body of a patient in a fairly early stage of the disease. No one, again, doubts but that typhoid spreads through the water, through contamination of the water supply, but now here is the difficulty. If we examine, in the first place, the water supply supposed to be contaminated, in case after case we may be successful in

discovering on suitable media of growth colonies, or growths, which closely correspond to typhoid bacilli ; or, again, if we examine the stools of the patient supposed to be affected by the disease, there again we may, among crowds of colonies presenting but a slight divergence from the characters usually regarded as typical of the bacillus of enteric fever, find some few colonies only distinguishable by the most delicate tests, but still not quite conforming to the type, and the question is, are those colonies truly those of the typhoid bacillus, or do they represent some closely allied species ? For myself I scarcely see how it is possible to give a positive answer in either of these cases. It is true that in other diseases the point can be settled by experimental inoculation into animals ; in enteric fever, however, unless one is successful in gaining cultures of the microbe direct from the human organism from a typical case of the disease and employing them while they are still young, inoculation into animals is of no effect. Then there is another side to the question. Suppose that one repeats the series of experiments made by Babes, and carefully examines the peculiarities of the growths obtained from different cases of undoubted typhoid at different periods of the disease, then it is possible by these means to separate out quite a large number of cultures, whose general properties, it is true, correspond with those of the typical Bacillus Typhi of the text-books, but which at the same time in minuter characters differ from the type and from each other to quite the same extent as do the cultures of doubtful import found in supposed contaminated water and in the fæces of suspected cases. I do not mean to say here that in the majority of cases of typhoid one comes across any marked divergences from the type, but in a large number of doubtful cases it is that one is most likely to have, and that one most frequently does have these slight cultural divergences, and the question is what is the conclusion at which we are to arrive. Are we dealing with varieties of the bacillus of typhoid, or are these wholly different and non-pathogenic species ? What is to be our diagnosis ?

Or, take again cholera? Every one, I suppose, is acquainted with Cunningham's remarkable declaration that out of sixteen cases of cholera at Calcutta, the home of the disease, he was able to isolate no less than ten different spirilla resembling each other on the whole, but nevertheless in his belief presenting such clear and constant distinctions that he classed them not as varieties but as species.* Thanks to Professor Welch, of the Johns Hopkins University, I had last year a series of more than half a dozen growths taken from patients suffering from undoubted cholera, who had come from Europe in different ships to the port of New York during the last cholera epidemic. These cultures had been isolated by that able bacteriologist, Dr. Dunham, and certainly each separate case presented some little difference either in rapidity of growth, in amount of pigmentation, in morphological characters of the spirilla separating them off from Koch's type. Case after case might be recorded of these divergences on the part of growths of the cholera spirilla from different quarters, the most noticeable being those recorded by Sanarelli and by Metchnikoff in connection with spirilla taken from various cases in the neighbourhood of Paris. The difference between these various growths are as great as are those between Koch's typical spirilla and the spirilla obtained from water in regions where no true cholera has occurred. Only quite recently, for instance, an epidemic not of cholera but of diarrhœa has been described as occurring at Lisbon, in which spirilla closely resembling the true spirillum of cholera has been isolated. Here again, what is the conclusion that has to be drawn? How is the health officer at any point of landing to give an absolutely certain bacteriological diagnosis? Again, take diphtheria. Here we are introduced to a slight modification of the problem before us. In the case of diphtheria, as in that of

* It is true that at Berlin they have proved with success that a considerable number of these so-called species of Cunningham are only races of the cholera-spirillum —nevertheless case after case is being published in which spirilla isolated from cases of this disease do not accord in their characteristics with Koch's narrow limitations of the peculiarities of the cholera-spirillum.

suppurative disease (pyæmia) and of pneumonia, not to mention yet other examples, that we are dealing with a disease due to a microbe of usual pathogenic properties, there cannot, in a typical case, be the slightest doubt, yet it is possible very frequently to obtain from the healthy individual, either from the skin or again from the pharynx and mouth, cultures of a form morphologically and biologically undistinguishable, from the virulent microbes of the above mentioned disease.

This class of cases, it is true, is not quite so difficult to deal with as those previously mentioned, because while morphologically the saprophytic forms are undistinguishable from the pathogenic, a clear distinction can be gained by experimental inoculation. Animals will take the disease and die in the course of a few hours if inoculated with the pathogenic form, and will resist inoculation or die only after many days if inoculated with the saprophytic form, and yet it must be confessed that from a diagnostic point of view this morphological likeness does introduce the grave difficulty that in order to arrive at a sure diagnosis, experimental inoculation must be performed and the bacteriologist must sacrifice a very large number of animals. But even this experimental procedure only determines the pathogenic qualities of the isolated microbes ; it does not wholly settle the question of species. We know both by experiment and study of growths obtained from various cases that pathogencity is a variable quantity, just as are ferment production and optimum temperature of growth.

Of course I must acknowledge that in speaking thus I am looking and making you look at one aspect of the case, but I am doing this purposely, because unless this aspect be duly contemplated, there is a danger of wholesale and uncertain diagnoses being made, and if bacteriology is to be the indispensable adjunct to departments of public health, it is urgently necessary that during the next few years, while the usefulness of bacteriology in diagnosis is under trial, the very greatest care be taken to preclude

hasty and incorrect diagnoses. I acknowledge freely, for example, that even without experimental inoculation one is generally able to determine by bacteriological methods whether a given case is or is not one of diphtheria ; where the true disease exists, there the number of colonies developing at the end of twelve to twenty hours is relatively enormous ; whereas, in a case where the bacillus present is not pathogenic the number present upon the surface of the medium is very few.

But making all acknowledgments of this nature that can be made, I still believe that what I say is worthy of earnest consideration and constant remembrance on the part of the bacteriologist. Not until some absolute method for distinguishing between various species of bacteria has been elaborated, will bacteriologists be able to make an absolute diagnosis in this most important class of doubtful and suspected cases. And for my own part I am inclined to believe that no such method will ever be devised. What I say may, to some at least, appear heretical, nevertheless it is my opinion, and I find that it is the opinion of most of the bacteriologists whom I have met that with increasing knowledge there is increasing difficulty in sharply defining the various species of bacteria. That this should be so seems to me to be only natural, for what are bacteria but the very simplest forms of life with which we are acquainted, of shape so simple that throughout the whole of the group we have but a passage from sphere to straight rodlet, to curved rodlet, to spirillum, forms without sex and multiplying in the main by fission or division.

As Weissman has remarked with regard to a similar simple form, suppose that an amœba attached to some small particle in a current gains or protects itself by a thickening of its ectoderm along the surface exposed to the current, then if that amœba divides, each of the two amœbæ will possess the same characteristic of the slightly thickened ectoderm, and remaining in the same region or under the same conditions, all the descendants of this one amœba

must inevitably possess this same characteristic, and in this way a special race of amœbæ must tend to be produced. So it is with the bacteria, slight alterations of environment must affect, and, it has been proved experimentally, undoubtedly do affect the characters of the microbes subjected to those changes, and there is an absence of that beneficial effect of sexual fusion and reproduction to preserve the mean characters of the species. Given any one form of microbe it can only retain its special characters over any long period of time by retaining a like environment, and thus it is that we must expect to find not so much sharply-defined species of pathogenic microbes, as fairly well defined groups of pathogenic microbes presenting slight divergences either in virulence or in morphological characters, or in power of fermentation or in all of these conditions, the microbe varying to a slight extent according to variations in environment. In cases of disease that are what is termed most typical there we must expect to find and to isolate the microbe most nearly presenting typical characters. In our doubtful and difficult cases we must equally expect to find microbes departing from the type. It may be that in the individual showing atypical symptoms, some peculiarity in his system, some increased or lessened power of resistance to the inroad of the bacteria, may bring about a modification of the microbe. It may be on the other hand that through unusual environment the microbes have become modified prior to their entry into the system, and thus rendered capable of producing only a modified disease. Probably both of these are factors. In either case it appears to me that the bacteriologist of the future will not so much recognize sharply-defined types as he will group together under broad headings, varieties or races of bacteria having common characters of growth and somewhat similar action upon the organism ; while the officer of public health, meeting with a member of one of these groups, associated with a not perfectly typical case of disease, will treat it as suspicious, and will treat a case from which is isolated, not necessarily as one of clearly-

defined disease, but as one worthy of detention and observation; that is to say, in the future it should not be necessary to make an absolute and possibly incorrect diagnosis, but it will be deemed justifiable to simply state that the case is suspicious, inasmuch as the bacteriological evidence is suspicious. As to this grouping of bacteria, there is already a fair consensus of opinion with regard to certain pathogenic forms; for example, we recognize broadly a group of micrococci producing suppuration, of bacilli causing the development of tuberculosis in different animals, of spirilla inducing choleriform diarrhœa, of micro-bacilli of acute septicæmia in various genera of animals. But we still know very little about the relationship of the members of the various groups.

It has seemed to Dr. Wyatt Johnston and to myself, as well as to many other bacteriologists, that the best field for establishing the laws of grouping is to be found in a study of the innumerable slightly varying forms discoverable in ordinary water. From the very wealth of the bacterial flora in water, the subject of these bacteria in the water supply is in an absolutely chaotic state, so chaotic that now-a-days one can scarce name and describe a new species, for fear lest the slightly different characters given by some other observer in some other part of the world, as those of a species which he has isolated, be that of some variety of the same species. It has seemed to us that the only way of emerging out of this chaos is for a series of laboratories to work out each one of the group of microbes; one laboratory, for instance, taking those producing green pigmentation; another the red pigment bacteria; another the Bacillus Coli Communis with all its varieties in contaminated water. By this means, working out a very large number of cultures isolated from regions all over the continent, the points of resemblance and of divergence of these cultures will best be determined, and as I say from the study of a large number of closely-allied forms, it will be that the laws of grouping can be determined; in fact only

by this method can we establish some guidance to lead us out of our present difficulties. The scheme, it is true, is a large one and may possibly be found impracticable ; nevertheless we deem it worthy to make the attempt to gain the co-operation of others, and we hope that, before long, with this co-operation of other laboratories throughout America, some good work may be initiated in the direction here indicated.

DIPHTHERIA AND DIPHTHERITIC PARALYSIS AND THEIR TREATMENT.

By S. P. Cooke, M. D., Ottawa.

Diphtheria, so-called from the Greek word διφθέρα, leather, or a skin, is an infectious and contagious disease, characterized by a fibrinous exudate, usually upon a mucous surface or upon the skin when deprived of its epidermis. It is due to the presence and action of bacilli at the seat of infection, and is accompanied by constitutional disturbances and nervous symptoms due to the absorption into the circulation of a virulent poison—toxalbumin. The presence of the Klebs-Lœffler bacillus distinguishes it from other forms of pseudo-membranous inflammation.

According to the latest researches the membrane appears in three different forms, any of which may be present in either a mild or severe case.

1. A membrane lying upon the mucous surface of the pharynx and removed without much (if any) injury to the underlying parts.

2. Membrane invading the epithelium and upper layer of the mucous membrane.

3. White or gray infiltration of the deeper structures, sometimes ending in necrosis.

Clinically cases of diphtheria may be classified as follows, according to its frequency of occurrence in different situations, viz.: 1, pharyngeal; 2, nasal; 3, laryngeal; 4, ocular; 5, cutaneous; 6, aural. It also occurs in the vagina and anus.

Diphtheria was known to the Ancients and has been described under many names, but Paul Bretouneau, of Tours, in France, in the year 1826, first called it *diphtherite* and pointed out the true pathology of the disease. In 1855 he substituted the name *diphtherie* for diphtherite. The name was almost unknown in English medical literature till 1859, when the Syden-

* Read before the Ottawa Clinical Society, June 1894.

ham Society published a volume of memoirs translated from the French of Bretonneau and others; the name slightly modified has now been accepted by all European languages.

As a schoolboy in this city about 34 years ago I remember a young and prominent barrister being attacked with a malignant form of sore throat, which proved to be diphtheria and destroyed his life. The disease did not spread in the city to any extent, but in the surrounding country, especially up and down the valley of the Ottawa, the fatality was considerable.

Diphtheria is highly contagious; it has its favourite localities —localities in which it is always endemic and frequently epidemic. It is most common between the ages of two and ten years, but may attack the new-born infant or those infirm with age. It is not hereditary, but certain individuals and families seem to have a special aptitude for receiving and developing the poison. As an example permit me to cite the record of a family who lost a child of the disease in Paris, a sister two years after died in Florence, and about the same time an elder brother perished from the same affection at the Cape of Good Hope. And the mother of these three children nearly succumbed to this affection in childhood herself.

I can recall to mind now in my own limited experience at least three families who have lost nearly all their offspring at different times from this affection.

One family residing on the Gatineau road, the father a farmer by occupation, having lost one child after another as they approached the second year, at my suggestion built a new house on another part of his property, and instead of using the water from a creek which flowed past the house he dug a well, but the next child died within a year of its birth.

It was endemic in Egypt and Syria, receiving the names of Egyptian and Syrian ulcer in the Homeric period 1000 years before Christ. In England in the epidemic of 1858–9 it caused the death of over 20,000 people. The late Dr. Fothergill says children and young people are more prone to it than adults; a greater number of girls have it than boys, more women than men, and the weakly of either sex are more likely

to suffer than the strong and vigorous. Climate and season do not influence it; it presents the same features the world over. The period of incubation is from 2 to 3 days, but even 14 days may elapse from the exposure to the first appearance of the disease.

Pharyngeal diphtheria is the commonest form of the disease, 19 cases out of 20 commence in this situation.

The early symptoms of this disease are difficult to classify; usually we are called to see a child who has perhaps vomited its last meal, is slightly feverish and listless, has perhaps had a convulsion, is pale and pinched looking; then on opening the mouth we find more or less decided redness, with swelling of one or both tonsils; soon afterwards we see a sharply defined whitish patch, perhaps on the tonsils or posterior wall of the pharynx; it resembles at first coagulated mucus, it is semi-transparent, grows concrete and thick and very soon reaches a membranous consistance.

The majority of text-books teach us that any attempt at detaching this membrane will leave a bleeding surface. From personal experience I can safely say that this does not always occur. I have frequently removed a diphtheritic membrane without causing any hæmorrhage. Trousseau maintains that by careful manipulation there is not the slightest oozing of blood, and that it can, moreover, be shown by the aid of the microscope that on the surface which adhered to the mucous membrane the epithelium remains with its vibratory ciliæ intact.

The disease may extend from the pharynx upwards to the nose, lachrymal ducts and eustachian tubes, and downwards involving the trachea and its divisions. Almost invariably the lymphatic glands at the angle of the jaw corresponding with the swollen tonsil are turgid. This symptom is of paramount importance, as in ordinary membranous sore throat the glandular engorgement is entirely absent, or if present is much less marked than in pharyngeal diphtheria.

When the disease is left to itself it generally remains for five or six days confined to the pharynx, the older the subject the longer is the disease in becoming developed. False membranes

form more rapidly in children than adults, from the greater plasticity of the blood in the former. In children between three and six years of age both tonsils and the posterior part of the pharynx may be coated with diphtheritic membrane in from 36 to 48 hours, whereas in adults and old people from five to six days may elapse before all these part are invaded.

According to Trousseau the membrane grows from day to day by the addition of new layers which form below those first deposited; the layers assume a stratified arrangement, those at the surface becoming soft and easily torn, and are altered in colour by food and medicine taken by the patient, by matters vomited, by oozing of blood from the pharynx or posterior nares; become grayish or blackish so as to resemble a gangrenous slough, and exhale a disgustingly fœtid odour, but the detritus being removed the mucous membrane appears red, scarcely excoriated and certainly presenting no trace whatever of gangrene. This great clinical teacher only met with three cases of gangrene in his whole career.

Pharyngeal diphtheria sometimes invades the œsophagus and even proceeds to the cardiac orifice of the stomach, but usually invades the larynx and trachea, causing the very fatal affection known as diphtheritic croup.

In the case of a married lady I attended last summer with pharyngeal diphtheria the prostration was extreme and vomiting for 24 hours almost uncontrolable. I remained all night at the bedside of this patient, constantly fighting the invisible enemy, and on the third day, when all membrane had disappeared from the throat, she was attacked with severe abdominal pain, became very pale and symptoms of collapse were ushered in. She passed from the bowels a large quantity of blood, but thanks to ergot, turpentine and whiskey she rallied and is well to day.

Nasal diphtheria may be either primary or secondary, but usually extends from the pharynx. First of all a redness appears at the orifice of the nostrils, analagous to that observed in persons suffering from coryza. Even slight coryza supervening in diphtheria is to be regarded as a serious occurrence, for it shows that the specific inflammation has reached the nasal

fossæ. The cervical glands soon become involved as the lymphatics from the nose empty into them, there is an increase in the secretion from the nostrils, the patient blows his nose frequently, the mucus secreted is mixed with minute quantities of blood, and there are generally attacks of epistaxis; within 24 or 48 hours there will be a profuse flow of sanious ichor and the lining of the nostrils is covered with false membrane; there is also present lachrymation, an almost never-failing symptom; it is caused by obstruction of the lachrymal passages from tumefaction of their mucous lining. Sometimes the false membrane reaches the eye from the nose. Notwithstanding, with the mildness of the general symptoms life is always in serious jeopardy when there is much glandular engorgement. This glandular turgidity, says Trousseau, is a symptom redolent of malignity, and he says there is no occurrence so alarming as the extension of the disease to the olfactory mucous membrane. Of 20 persons attacked with nasal diphtheria 19 die. Bleeding from the nose often precedes the formation of false membrane, and these bleedings constitute an important warning of the coming of plastic exudation. Epistaxis must always be regarded as a most serious symptom. Great blanching of the skin is a constant accompaniment of this form of diphtheria; it is a sign of the cachectic state into which the patient has fallen. There is a dislike for food both in children and adults. The gallop heart rhythm, indicating severe heart failure, is frequently present even before the pulse becomes markedly quickened; it is supposed to be caused by the ventricles not contracting at the same time.

As the case goes on, the surface becomes cold, there is either extreme restlessness or an ominous stillness supervenes and, as I have seen upon at least three occasions, syncope may occur; once in a boy twelve years old wishing to empty his bladder, while in the act fell forward against the bed a corpse, and two younger patients die under similar circumstances.

Laryngeal diphtheria may be either primary or secondary; the latter is the commonest form. It is then an extension downwards from the nose or pharynx; its propagation to the

larynx was known long ago. Arçtaeus speaks of it as " ulcera pestifera " in the 17th century ; the Spaniards called it garrotillo ; the Americans suffocative sore throat at the close of the last century, and it is at present known to us by the Scottish name of croup—diphtheritic croup.

The prominent symptoms of croup are too well known to all of us for me to trouble you with any details. A short time after the invasion of the trachea difficulty of breathing comes on, it occurs earlier in children than adults. Sometimes, although the laryngeal lesion continues, says Trousseau, and although there is a permanent mechanical obstacle to the passage of air, and although the false membrane remains adherent to the vocal cords, the difficulty of breathing is intermittent. The patient may have several fits of dysponœa during the day, proceeding even to suffocation. Bretonneau says the intermissions belong to a numerous class of pathological phenomena; he further says, is not the pain of cancer, stone in the bladder and other diseases intermittent, although their cause is permanent ? It happens sometimes that in a paroxysm of coughing the larynx is suddenly cleared. I have only seen this cccur once in my 25 years practice.

Dr. Peter says this expulsion of the false membrane may lead to a spontaneous cure, but usually it follows a downward course to the ramification of the bronchial tubes, and it does so with great rapidity ; in four days a considerable surface of the bronchial mucous membrane may be coated with diphtheritic deposit and it is generally between the second and fourth days inclusive that the bronchi are invaded, if they are to be invaded at all.

Ocular diphtheria usually advances from the nasal fossæ to the eyelids. The author I quoted a moment ago says, at first the attack resembles simple catarrhal inflammation, but in a few hours symptoms come on like those in purulent ophthalmia, but the presence of the plastic exudation makes the diagnosis clear. Sometimes the cornea is destroyed and the eye lost ; it is generally of a malignant type and fatal. Diphtheria may attack the mucous membrane of the vagina and of the anus. I have

seen but one case, in a young woman about 20 years of age; there was pharyngeal diphtheria in the house.

Cutaneous diphtheria may manifest itself upon any part of the body which has been deprived of its epidermis, therefore great care should be taken to avoid blistering, the application of leeches and to cauterize thoroughly any solution of continuity.

Aural diphtheria usually extends up the eustachian tubes and is not common.

To conclude this part of my subject allow me to read you a few general observations upon some special symptoms and the nature of this dread disease.

Troussseau has described at great length and very minutely an epidemic of diphtheria of the mouth which broke out in a garrison at Tours in France. Unlike other forms of diphtheria it often remained stationary for months, seldom attacking nursing children. I have already made this paper too long, but would refer you to Trousseau's *Clinical Medicin*, second volume, for an account of this disease.

Whatever manifestations and whatever general forms diphtheria may assume, it is always in its essential nature the same disease. The diversity of aspect presented by the local affections depends solely upon the diversity in the nature of the tissues in which the morbid action shows itself. The different manifestations all originate in one sole cause; it is not inoculable from man to man.

The alteration which takes place in the blood was first pointed out by Dr. Millard in 1858. The blood becomes brownish, the colour of prune juice or liquorice; it stains the fingers; the blood forms soft clots and the arteries, instead of being found empty after death, contain nearly as much blood as the veins.

Albumen occurs in the urine in about one-third of the cases, but it is also found in other infectious specific troubles; it was first noticed in diphtheria by Dr. Wade, of Birmingham.

The striking paleness of the skin in diphtheria has, I have no doubt, been frequently noticed by all present. It is due, no doubt, to the weak circulation and, I think, to the general sepsis of the system.

The absence of knee-jerk noted by Dr. MacDonnell, of Montreal, is also a symptom of diphtheria; but, gentlemen, I think you will agree with me in saying that by careful observation of general prominent symptoms we can always be certain of our diagnosis without being too scientific. In private practice parents, as a rule, do not look favourably upon too much handling of young children, and here I may state in this connection that we should always use very gentle means in examining diphtheritic throats in children, as death has been known to follow rough handling on more than one occasion.

Lœffler says four weeks should elapse from the beginning of the attack until children return to school, but each case must be judged upon its own merits; the only safe way is to ascertain the absence of bacteria, see that all clothing has been thoroughly disinfected, and the child perfectly clean. If a nursing infant contracts diphtheria it should be weaned.

Welch says that although diphtheritic bacilli form no spores they withstand for a long time drying and other influences which are fatal to less resisting forms of bacteria. Specific bacilli have been obtained in cultures made from diphtheritic membranes preserved dry in a piece of linen cloth for five months. They may live still longer in a moist state and the virus may retain its activity for a year or more in damp situations. Anything to which the diphtheritic membrane can adhere may be the means of spreading the infection.

Paralysis is by far the most important of the sequelæ of diphtheria; it can be experimentally produced by inoculation and occurs more frequently in adults than in children. It occurs in a variable proportion of cases ranging from 10 to 15 and even 20 per cent. It comes on usually in the second or third week of convalescence, sometimes as early as the eighth day of the disease.

The affection, says Dr. Osler, is a toxic neuritis due to the absorption of the poisonous toxalbumin, and like other forms of multiple neuritis has an extremely complex symptomatology according to the nerves which are affected. The paralysis may be local or general; of the local form the most common is that

which affects the palate. This gives a nasal character to the voice and frequently causes the expulsion of liquids through the nose. The affection may extend to the constrictors of the pharynx and deglutition becomes difficult or quite impossible. I remember the case of a six-year-old boy in which paralysis of the pharynx occurred four months after convalescence had set in and caused the patient's death.

The muscles of the eyes are frequently attacked; there may be ptosis, strabismus and loss of power of accommodation, and very often with the palatal paralysis is associated a weakness of the legs without actual palsy, but with loss of the knee-jerk.

The heart is frequently affected, marked slowness of the pulse often occurs, even coming down to 30 beats in the minute. Heart failure or fatal syncope may occur at the height of the disease or during convalescence. The gallop heart rhythm, mentioned in a former paper, occasionally occurs and there may be slight increase in the area of cardiac dullness.

The intercostal muscles and diaphragm sometimes suffer, causing intense dyspnœa. The bladder and rectum are occasionally affected.

Mutability of symptoms is characteristic of diphtheritic paralysis. You will often observe the affection increasing in one limb and diminishing in another, and the parts which are first affected after recovering frequently relapse into a worse condition than in the beginning. This peculiarity does not depend upon any lesion of the nerve centres noticeable, at any rate, post-mortem.

Virile debility, amounting sometimes to complete impotence, frequently exists in diphtheritic paralysis. The senses of smell, taste and vision are all in turn affected, but dimness of vision is most commonly met with and is occasionally one of the first symptoms of diphtheritic paralysis.

Albumen is not always present in this affection. Moreover, there is said to be no coincidence between the presence of albumen in the urine and the variations in the paralytic symptoms. The nervous symptoms which occur in Bright's disease are convulsive and comatose in their character and have no resem-

blance to those now under discussion, with the exception of the amaurosis, so often met with in albuminuria. No one has ever observed paralytic manifestations in Bright's disease.

Graves in his clinical lectures, wishing to point out the relation which exists between different diseases, mentions numerous well known facts which present a great analogy to those we are now studying. He states that an entire ship's crew, after eating of a species of conger eel, were seized with nervous symptoms similar to those produced by lead poisoning. Some of them died in a state of violent delirium, those who survived were affected with general paralysis; in some the affection was permanent, in others recovery took place in three or four months.

Trousseau says that paralytic affections sometimes supervene in persons attacked with urticaria, and I wondered when I read it whether the eating of some kind of fish, which frequently causes urticaria, did not also produce the paralysis. He also says that in syphilis, irrespective of paralysis dependent upon specific tumours of the encephalon and spinal cord and osseous growths of the cranium and vertebral canal, there occur other paralytic affections which cannot be traced to any lesion.

Paraplegia has been known to follow small-pox and other eruptive fevers, also in convalescence from typhoid, typhus and cholera. Paralysis of the palate has been noticed after typhoid fever.

Sir John Harley, of London, in the first volume of *Reynolds' System of Medicine*, demontrates many points of resemblance between scarlatina, diphtheria and typhoid fever. The inhalation of bisulphide of carbon causes a form of paralysis, and workmen employed in the manufacture of caoutchouc suffer from paretic affection.

Treatment of Diphtheria.—Many and varied are the remedies which have been tried and found wanting in the treatment of this affection; as yet no specific has been discovered for the cure of the disease.

The two principal indications are to limit or prevent the local development of bacilli and to fight with unrelenting vigour

the effects of the absorption of the toxic elements which they produce. It is next to impossible to lay down any routine plan, and each case should be treated on general principles. The sick room should be well ventilated and lighted, a temperature of about 70° maintained and the air saturated with steam which is impregnated with some volatile antiseptic, like the following combination, viz.:

Acid carbolic,	℥i.
Ol. encalypti,	℥ii.
Spts. of turpentine,	℥iii.

Sig.—Add a tablespoonful every half hour to about a quart of water, which is kept simmering over a flame.

The throat should be kept free from debris, and I think peroxide of hydrogen diluted with listerine, which I have used myself for many years, or perhaps better still, the peroxide diluted with lime water, is the best remedy known for this purpose. An objection to the peroxide is the pain it sometimes causes and it occasionally produces fresh lesions in the healthy mucous membranes. I give you this on the authority of Dr. Dillon Brown; I have never noticed it myself. Dr. Brown says if considered necessary to use the peroxide pure, neutralize the excess of acid with an alkali. In laryngeal cases inhalation must be depended upon, and the fumes from subliming calomel are said to be most destructive to the Klebs-Lœffler bacillus. It usually takes about 10 minutes to sublime 15 grains of calomel. This treatment is believed to protect the bronchi and was first suggested by Corbin, of Brooklyn, and is said to obviate tracheotomy or intubation on many occasions. Twenty years ago, during a severe epidemic in Hull, I used sulphur as a local application by insufflation and gave internally a mixture of chlorate of potash, tincture of iron and glycerine. I had better success than with many remedies since tried. Speaking of chlorate of potash I may say of the drug that in my hands for 25 years it has proved an excellent remedy.

Dr. Coghill, of the Isle of Wight, at the International Medical Congress at Washington, read a paper on the drug and sums up its value as follows: It is useful in cases of deficient

oxygenation of the blood; in 15 grain doses 3 times a day it is serviceable in preventing diseases of the placenta and of enabling a woman to go to full term who had previously miscarried three times; this is also my own experience. Barthalow says in maternal stomatitis it is the only remedy worth mentioning. Dr. Coghill finds it a cardiac stimulant, probably by improving the quality of the blood. Waugh's formula in diphtheria is :

	Pot. chloratis,	ʒi.
	Acid hydrochlor,	ʒss.
Mix and add	Tinct. of iron,	ʒii.

Water sufficient to make 4 ounces.

Sig.—Teaspoonful undiluted every 2 hours.

Free chlorine is generated in this mixture and it has been found an excellent remedy.

Stimulants according to the age and strength of the patient should be given from the beginning; but, gentlemen, avoid over-stimulation. Enough is as good as a feast, and I have seen diphtheritic patients almost moribund from being dosed with brandy and whiskey *ad libitum*. The most nourishing food should be given at stated intervals, so as to avoid over-distention of the stomach and consequent vomiting from indigestion. When deglutition is painful I have found ice cream to be taken by children when other food was refused. It acts also as a destroyer of bacilli, as they do not thrive at a low temperature. I have frequently employed the ice bag to the angles of jaws when the glands were much inflamed, I think with good results. Never forget, under any circumstances, to keep nutrition up to the mark.

Sir Morrell McKenzie placed great faith in the salicylate of soda. Subsulphate of iron with carbolic acid and glycerine makes an excellent application. In 1891 Mr. Turner, of Gloucester, England, recommended parraffin or coal oil as a local application for diphtheria. The membrane was scraped or peeled off and the remedy applied to the surface; its action is supposed to be due to the higher hydrocarbons contained in the oil. It may be used as a spray or thickened with soap bark and applied with a brush.

About three weeks ago I was called to see a young lady whose right tonsil was covered with diphtheritic membrane. I ordered a gargle of coal oil and peroxide of hydrogen, a small quantity to be used every three hours. At the same time she took internally a teaspoonful of listerine every three hours. In 24 hours the membrane had disappeared. A younger sister contracted the disease and used the same treatment with the most gratifying results, the only untoward symptom being inflammation of the tonsil, which went on to suppuration at the end of six days, but the patient exposed herself to the night air a few days after the diphtheritic attack. She also suffered from paralysis of the palate. I intend following up this line of treatment and will furnish you with results in due time.

Corrosive sublimate has many admirers, but allow me with all modesty to say that I am not amongst the number. I have always been disappointed in the use of this drug, and I am happy to find a man like Prof. Osler in his work on the Practice of Medicine saying that in diphtheria he much prefers the perchloride of iron and that he has never seen from the administration of mercury, either as calomel or bichloride the specially good effect which many writers describe. Dr. Dillon Brown says for the gallop heart rhythm morphia administered hypodermically is a most efficient remedy—ice bag over heart, musk internally, possibly pressure over pneumogastrics in the neck.

Both animal and vegetable pepsines have been used as solvents of diphtheritic membrane, but their constant and thorough application is difficult, and their usefulness consists in being kept in contact with the membrane. Lactic acid and trypsin come under the same category.

Nasal diphtheria requires prompt and thorough disinfection, and here absolute cleanliness plays an important part. A solution of borax and glycerine, a saturated solution of boric acid and peroxide of hydrogen with lime water may be carefully applied with a syringe, the nozzle of which is directed horizontally to permit of the fluid escaping through the opposite nostril; care must also be taken not to allow the syringe nozzle to press on the septum or inferior turbinated bone, as troublesome epistaxis may be set up.

Laryngeal diphtheria always fills the physician's mind with anxiety and the patient requires the most careful watching. When the first symptoms are noticed a tent should be placed over the cot or bed and steam, pure or medicated, introduced constantly. If breathing becomes laboured and signs of urgent dyspnœa come on it is our duty to interfere mechanically. This may be done in two ways—by intubation or by tracheotomy. Statistics show very little difference in the results from these operations; perhaps intubation makes the best showing, but it is probable that many of the milder cases are intubated, while the worst cases are reserved for tracheotomy. Intubation certainly has the advantage in the first ten years of life, after that, as far as recoveries go, the difference is not very marked.

Stern has summarized the indications which are helpful in determining the choice of operations as follows.

1. All things being equal, intubate when the patient is under $3\frac{1}{2}$ years old.

2. Between $3\frac{1}{2}$ and 5 years I would be regulated by individual circumstances, with a preference for tracheotomy.

3. After 5 I would perform tracheotomy.

4. In adults I would try intubation.

5. Amongst poor people, irrespective of age, I would always intubate, as skilled nursing is always requisite after tracheotomy and cannot be procured outside of our hospitals for the poorer classes.

6. Intubation should never be performed when there is a possibility that the trachea is crowded with membrane.

Dr. Dillon Brown recommends arming a small laryngeal applicator with cotton smeared with Canada balsam and repeatedly passing it down the larynx, by which means much loose membrane may be removed. An emetic sometimes answers the same purpose.

Recent studies in immunity have given us a knowledge of an antitoxine which neutralizes and destroys the toxalbumin of the Klebs-Loeffler bacillus. Although experiments have been confined so far to animals, the results have been successful enough to justify the hope that the same results will be followed in the human system.

Post diphtheritic paralysis has a natural tendency to get well, and all we can do is to aid nature in building up the shattered system. The chronic catarrh left after diphtheria should not be neglected, but I have always found that as the patient gained strength the catarrhal trouble disappeared.

In conclusion, gentlemen, I think it the bounden duty of every medical man when called upon to treat diphtheria, be the case mild or grave, to impress firmly upon the mind of the attendant the great dependence which must be placed upon his or her carrying out your treatment. Parents or other relatives, as a rule, are unfit to take charge of diphtheritic patients and at times, indeed, the nervous system is so upset that children become actually unmanageable.

I am now giving coal oil internally as well as using it locally. The unrefined Canadian oil is alone suitable for internal administration, as in the refining caustic acids are employed, which renders the oil too irritating.

NOTE.—The following is the formula I am now using as a spray every half hour:

℞—Paraffine (unrefined)	ʒvi.
Spts. wine (rect.)	ʒii.
Essence menthae pip.	mv.

SOME CASES IN PRACTICE.*

Traumatic Hernia—Exploratory Laparotomy—Hodgkins' Disease—Placenta Prævia.

By Robert E. McKechnie, M.D., Nanaimo, B. C.

In the following case reports you will probably not find anything decidedly new or startling, but rather, with one exception, a series of reports of cases which any of us may meet with any day.

The question may be asked, "Is any good then served by writing up such work?" The younger members of the profession will say "yes," for such reports give a more vivid and realistic picture of cases in practice than can be found in the text-books, bring one's mind, in fact, from theory to practical experience, and in addition serve to refresh one's memory to some extent with those points in diagnosis and treatment which are mainly required. These remarks are not meant to apply to the following notes, but rather to the publishing of case reports in our journals. Good work is done by so doing, and our minds are kept on the *qui vive* by reading them there, and many a successful diagnosis has been led up to by a busy practitioner having read of a similar case while he has been hurriedly running through his journal. Therefore, hoping that the following may not be without some value, I submit them for your use.

Traumatic Hernia, Palliative Treatment, Cure.—T. S., a coal miner aged 35, temperate and of good habits, while engaged at his occupation was injured by a fall of rock which forced his body against his pick handle. He came to my office complaining of a swelling above the right groin, said it was not very painful, had been received that same day, and was caused by having been forced against his pick handle.

* Read before the Canadian Medical Association at St. John, N.B., August, 1894.

On examination I found a soft elastic tumour, oblong in shape, about three inches by four, just above Poupart's ligament on the right side and extending from the pubic to the superior iliac spine. It was resonant on percussion, gave an impulse on coughing, disappeared when the patient assumed the dorsal position, etc., giving, in fact, all the symptoms of hernia. An opening was found through the abdominal muscles admitting the tips of three fingures and situated at a point half an inch above the centre of Poupart's ligament. The skin over this opening was not even abraded, but later on ecchymosis appeared.

For treatment I was tempted to make success a certainty by laying open the site of the hernia and closing the wound as in a laparotomy, but decided otherwise. I put my patient to bed for three weeks with a pad held firmly over the wound by a spica bandage. Since then he has been up and about, still wearing the pad while awaiting a special truss which I wish him to wear for a few months. The accident happened nine weeks ago and to-day there is no sign of a hernia, merely a hard scar to be felt at its site, with the skin freely movable over it. On causing him to strain I cannot detect the slightest evidence of bulging, but everything seems firm and secure. But to make doubly sure I intend him to receive the benefit of the support of a truss until the scar tissue becomes stronger. Therefore I claim a cure in this case from the use of simple palliative treatment.

Laparotomy in a Case of Mistaken Diagnosis.—I was asked to see a case, and later on to operate on it, by Dr. Campbell, of Northfield. The patient was a corpulent Belgian woman of 35, with a numerous progeny. She had always been very healthy, with no indications of pelvic disease before the present illness. Four months previously her menses had stopped and she considered herself in the "family-way," but her good health stopped with her menses. She had during the last two months had increasingly severe pains in the lower abdominal areas, with at times a sanious discharge from the vagina, and during this

two months her temperature kept above the normal, being variable. She lost strength rapidly and when I first saw her was in bed, with a feeble pulse of 120, temperature of 103°, face anxious and indicative of suffering, knees flexed and the patient complaining of much abdominal pain. On examining bimanually I found Douglas' pouch filled by a firm, immovable, smoothly rounded mass, the cervix uteri jammed against the pubic bones, and a mass occupying the hypogastric region and resembling a pregnant uterus of the fourth month in shape and size. The examination caused much pain. A leucorrhœal discharge was noticed from the vagina.

The woman was thought to be pregnant, and her symptoms pointed strongly to the presence of pus somewhere. Accordingly, an exploratory laparotomy was decided on, with the intention to deal as required with what was found.

When the abdomen was opened the tumour in the hypogastric region was found to be adherent quite freely to the intestines. The adhesions having been partially broken down, on passing my hand down the posterior surface of the tumour I encountered a mass of granulative tissue, with a base the size of a silver dollar. It projected from the tumour and was surrounded by numerous adhesions. Finally, on completely exploring the tumour with the hand passed down to Douglas' pouch, it was found continuous with the mass previously felt in the vagina. The whole mass was immovable and still adherent in many places. The tumour was very firm and not at all like a pregnant uterus. On account of the mass of granulative tissue found posteriorly and the exceedingly firm nature of the tumour, it was thought to be malignant and too far gone to justify a hysterectomy. Accordingly the abdomen was closed and an unfavourable prognosis given.

The after results of the case are interesting. The operation proved her salvation, although the operators can take no credit. On the eighth day afterwards an immense

quantity of pus discharged through a point of its own election in the abdominal wound, the temperature fell, and by the tenth day the patient felt so well that, in the absence of doctor and nurse, she got out of bed and joined in the regular Saturday night beer drinking, actually getting drunk. This did not hinder her rapid recovery, the sinus in the abdominal cicatrix eventually closing under daily irrigations of the abscess cavity, and to-day the woman is as strong and hearty as she ever was. I do not as yet know what structures were involved, where the uterus hid itself, what the mass of granulative tissue meant, why a large collection of pus like that should feel so solid, or why Fortuna should look so well after the operators as well as the patient.

Hodgkin's Disease—Treatment by Splenic Extract—Failure.—J. C., a coal miner, aged 36; married and with a family of healthy children; temperate and with no previous history of disease, luetic or otherwise.

This man was a patient of my partner, Dr. Præger, to whose kindness I am indebted for the privilege of trying a new line of treatment. J. C.'s illness dated back three years, with gradually increasing anæmia, general weakness and enlargement of cervical glands. I first saw him some six months before I started treatment. At that time he was in hospital, and Dr. Præger dissected out a large mass of cervical glands whose size was tending to compress the trachea and threatened suffocation.

Later on when I took him over he was bed-ridden, wasted to a skeleton, exceedingly pale, feverish, the temperature varying from 99° to 102°; pulse 150 and very feeble; glands perceptibly enlarged in the groins and axillæ, but immensely enlarged from the lower jaw to the clavicles, with much smaller enlargements posteriorly. The glands were hard and a little tender. Much pain was felt down the left arm from pressure on the brachial plexus; the sternum and ribs were quite tender on percussion and he also often complained of pain in them, inde-

pendent of any manipulations. Both liver and spleen were enlarged, but no abdominal glands could be felt. The case was clearly an advanced one of Hodgkin's disease, and in the beginning of May, 1893, I began treatment by injections, three times weekly, of 25 minims of saturated glycerine extract of sheep's spleen. Carbolic acid sufficient to make it 1 in 40 was added for preservative purposes. The treatment was kept up for six weeks. When first started the blood corpuscles were counted and found to be, red 415,000 per c.mm., white 50,570 c.mm., or a ratio of about 8.3 to 1. I cannot find in any text-book or work of reference such a low ratio or as few red corpuscles, and thinking a mistake had been made tried it again, with a like result, and then testing my own blood found the red 4,600,000 per c.mm., and safely concluded I was right.

On the day following the first injection his pulse dropped to 120 and he felt much better and stronger, and as late as June 13, 1893, I find this note: "Has continued to feel better, stronger and brighter; pulse still 120." He always said he felt better after an injection, but I discovered a fallacy due to his imagination, for several times when I could not get a fresh spleen I gave him his regular injection, merely of 1 in 40 carbolic, and found it answer the same purpose. The beginning of June, four weeks after starting the treatment, I found the blood contained the same number of white corpuscles, but an increased number of red corpsucles, these latter being of various sizes, a few normal, but the majority much smaller, while two weeks later the white cells were greatly increased in number, as many as 12 in a single square of a Zeiss hæmocymeter, many squares with from one to four cells in and a few with none. These white cells were found in clusters as though agglutinated. The red cells were found about five to a square, and all uniformily of a minute size. So that a six weeks' course of treatment by splenic extract had not arrested a degeneration in the blood, but had probably been instrumental in effecting a greater change than

could the disease itself. The patient was evidently losing ground in the last two weeks and I then discontinued treatment. He died about three weeks later.

I merely wish to record the above as negative work imperfectly done, but which may contain enough of fact to prove useful to someone else. The most interesting points are the decrease in the red corpuscles and increase in the white, noted when treatment first began, the ratio of 8.3 to 1 being extraordinary; and later on the increase in red cells of a very minute size, with the total disappearance of the normal sized cell, and at this same time the still further increase in white cells, which I forgot before to mention, varied in size from below the normal to half as large again as the normal. The treatment had no beneficial effect, but possibly the reverse.

Placenta Prævia—Induction of Premature Labor and Successful Result.—M. D., is the mother of three children, the youngest 13 years old. She was left a widow then, but recently married again and became pregnant. She was an active, healthy woman, with a previously good sexual history.

I was sent for when she was at the seventh month. Three weeks previously she was seized with a sudden flow, unaccompanied by pain, but it ceased itself in a few days on her remaining quiet. Two weeks later she again lost a little blood, which was arrested without medical aid. The day before I was sent for the flow again began, without pain, and as a large quantity of blood was lost at this time she became alarmed and wished assistance. I found her blanched, with a small rapid pulse; her abdomen distended with a pregnant uterus and a copious flow of blood from the vagina. In all it was estimated that she had lost one and a half pints of blood in 24 hours. Vaginal examination did not give postitive evidences. There was complete absence of a cervix uteri, and I could not find the os even, but this was due to the nervous state of the patient, which did not permit an examination entailing pain. However,

I diagnosed placenta prævia on the symptoms, kept her in bed, gave her an opiate and explained the situation to her husband, getting his permission to act as I saw fit The flow again ceased, but recurred more severely in six days again.

My friend, Dr. Davis, was called in, who gave the anæsthetic (chloroform), and right here I would like to give my opinion on its use in midwifery cases. It is undoubtedly more easy to get a patient to take it and to get a person under its influence than ether is. But I have invariably noticed that wherever it is given there is a much more profuse post partum flow than normal. And so I would suggest that in cases which have already experienced a loss, or where one anticipates more loss than ordinary, chloroform is contraindicated.

Before anæsthetizing her a more thorough examination revealed a vertex in the pelvic brim, but it was indistinct per vaginam, owing to some intervening body—the placenta. After getting her under chloroform she was prepared by having the vulva and vagina cleansed by a creolin solution. My hands and arms were likewise prepared. I then introduced my right hand into the vagina, and with difficulty discovered the os uteri of pin-hole size, but not the slightest evidence of the cervix. In fifteen minutes I dilated the os digitally, thrust my hand through the placenta, and seizing a foot drew it down, and rapidly delivered a living male child, which only survived four hours. But little blood was lost during the whole procedure The placenta was then stripped from its attachments and brought away, the uterus irrigated by a copious hot creolin solution, good contraction secured and the patient tidied up in bed.

The placenta was situated centrally, my hand having perforated it alongside the cord.

But little blood was lost up to this time, but in half an hour a flow began which was not checked for several hours. I account for it by the fact that the lower segment

of the uterus with the cervix does not contract as firmly as the fundus, hence the placental site was not shut up by this hæmostatic action. And I blame the chloroform, too, for leaving its relaxing effect yet apparent in these structures. The patient became collapsed, pulse irregular, almost imperceptible, 165, and the outlook was gloomy. Hypodermics of ergot, with hot douching, finally checked the flow, while champagne was used in combatting the collapse. For over four hours matters remained in *statu quo* but an improvement set in about half an hour after the patient had received a two quart rectal injection of saline solution, and never afterwards was the same serious state met with.

Despite the antiseptic precautions and a hot vaginal douche every four hours, the temperature became elevated on the evening of the second day and remained above normal to the ninth day. The patient, however, steadily gained in strength and was out of bed on a lounge at the end of two weeks and is now enjoying good health again.

Retrospect Department.

QUARTERLY RETROSPECT OF GYNÆCOLOGY.

PREPARED BY T. JOHNSON-ALLOWAY, M.D.,
Gynæcologist-in-Chief, Montreal General Hospital.

Hæmatoma of Vulva after Delivery.—GOLDENBERG (*Centralbl. f. Gynak.*, No. 30, 1894) notes that, according to Winckel's statistics, this complication occurs only once in 1,600 labours. A patient, aged 20, was delivered of her first child at term. Labour was protracted owing to rigidity of the os uteri. The head did not lie long in the pelvic outlet. At the end of three days delivery occurred without instruments; the physician left when the placenta had come away spontaneously. A few hours later he was sent for; the patient had been seized with giddiness and a swelling had developed. Goldberg saw her ten hours after delivery. She was in a state of great excitement, lying on her back and suffering from severe pain in the vulva. A very tender dark-blue fluctuating swelling, as large as a child's head, had developed on the site of the left labium majus, distending the perineum. It reached for a considerable distance up the vagina, but being so tender its limits could not be accurately defined. The uterus was well contracted. The hæmatoma was evidently due to the rupture of some submucous vessels from pressure of the fœtal head. As the hæmorrhage seemed to have ceased and the patient's surroundings were very insanitary the hæmatoma was not incised. Ice was applied to its surface with antiseptic dressings. On the fourth day the swelling burst and the blood escaped. There was no rise of temperature during childbed. Two months later, the patient having thoroughly recovered, no trace of the complication remained except a fistulous tract an inch deep opening on the surface of the perineum. Chevaleff (*Répert Univ. d'Obstét. et de Gynéc.*, July 25, 1894) states that a woman, aged 33,

was admitted into hospital with a swelling which had developed immediately after delivery. This swelling was as large as a fist and occupied the left labium majus, the corresponding half of the vestibule, the perineum below and the pubes above. The diagnosis was hæmatoma of the vulva through rupture of a vessel superficial to the pelvic fascia. The swelling was left alone for a week, ice, etc., being applied to its surface. Then a small incision was made at a point corresponding to the middle third of the labium. The tumour slowly emptied itself and there was no hæmorrhage. Recovery was perfect.

This is an extraordinary case of prolonged delay in delivery with forceps, and it is also defective in the matter of not having incised the hæmatoma at once when seen. These hæmatomata rarely bleed when incised, and if they do the bleeding point can easily be controlled.

Traction on the Tongue in Hysteria.—TH. BALADE (*Gaz. des Hip. Toulouse*, July 28th) has in two cases made very violent hysterical attacks cease by traction on the tongue, the organ being drawn with some force out of the mouth, and kept in that position for some minutes. This procedure was successful when every other treatment had failed.

This is a very "French" method of treatment. It reminds one of the barbarous "*Twitch*"—a loop of rope on the end of a pole, which brutal farriers used to put on a horse's tongue, high up—and then keep on turning the pole until the poor brute became subdued into submission.

Fibroids and Conception. Pregnancy and Labour.—HOFMEIER (*Zeitschr. f. Geburtsh. u. Gynak.*, vol. xxx., 1894), in a very complete and well-tabulated essay, denies that fibroid disease of the uterus has any direct influence in causing sterilty. Statistics do not show that, as has been alleged, subserous myoma predisposes considerably to sterility, whilst polypi and myoma of the cervix have little influence in that direction; nor can it be shown that fibroids promote fertility. These tumours seldom begin to appear till late in sexual life, so that if the patient is

barren or multipara the cause of her sterility or fecundity must have influenced her long before the development of her fibroid. The alleged frequency of this disease in elderly virgins is based on a fallacy. It is the local affection which the most readily drives a spinster to the gynæcologist, whilst middle-aged married women trouble less about small and slow-growing abdominal swellings. Women with fibroids who marry late in sexual life are fertile, though Hofmeir can hardly make out cause and effect in this fact. Fibroids by no means strongly predispose to abortion. It seems that this accident happens only when the uterine cavity is rendered unfit to bear through the size and relations of the tumour ; nor does fibroid greatly interfere with the uterine contractions during labour. The best time for hysterectomy is not immediately after delivery, but a few weeks or months later.

Extra-uterine Pregnancy : Elimination of the Fœtus per Rectum.—T. SPANNOCHI (*Raccoglitore Medico*, July 30th, 1894) reports the following case of extra-uterine pregnancy, remarkable for the mode of its termination. A robust woman, without trace of disease of any kind, four months after a perfectly healthy labour, began to complain of pains in the hypogastrium. The symptoms pointed to an extrauterine pregnancy, probably in the left Fallopian tube. A month later the sac ruptured, and the fœtus was discharged into the abdominal cavity. Reactive peritonitis around the foreign body came on ; then followed suppuration and perforation of the intestine with discharge of pus. Owing to the continuous contractions caused by the presence of the foreign body the intestine became dilated and prolapsed ; finally, after twenty-eight days, the fœtus came away through the anus. After a considerable time complete recovery took place.

This case is evidence of the most profound state of ignorance, inducing cruelty of the most barbarous nature.

A Case of Advanced Extra-Uterine Gestation in which a Living Child was Removed, the Placenta Left Undis-

turbed and the Abdominal Wound Entirely Closed.—Dr. CULLINGWORTH: Whereas all competent authorities are now agreed as to the proper method of dealing with cases of advanced extra-uterine gestation in which the child is *dead*, there is no such agreement as to the treatment of cases in which the child is *alive*. The difficulty in these latter cases lies in the enormous risk attending the removal of the placenta. The method that has of late been generally practiced is to perform abdominal section, remove the child, leave the placenta behind, drain the wound, and allow the cord to hang out of the wound by the side of the drainage tube. This plan, however, is generally followed by such a long process of sloughing and discharge that it was suggested by Lawson Tait, Bland Sutton and others to cut the cord off short and close the abdominal wound entirely, thus giving the placenta a chance of being absorbed, in any case postponing its removal until the activity of its circulation has diminished.

The case which I bring before you is, so far as I am aware, the first instance in which this suggestion has been carried out; and though the experiment was not successful in saving the woman's life, it failed, as it were, only by accident, and was so nearly successful as to afford the strongest encouragement to future operators to repeat it.

The patient was a wretchedly poor and ill-nourished woman, aged 33. She had last been pregnant three years previously. She ceased to menstruate in March or April, 1893, and had a severe attack of abdominal pain in May, with slight hæmorrhage from the vagina. In the middle of August she was again seized with severe abdominal pain, chiefly on the right side. In September she was sent into the hospital and then had an abdominal swelling which reached to an inch above the umbilicus and which was thought to be the pregnant uterus. Fœtal movements and fœtal heart-sounds were clearly heard. She remained fairly well from September up to January 5, 1894, when she was seized with acute pain and vomiting. On January

13 she had pains simulating those of labour, and as the uterus was found by her local doctor to be empty, she was again sent into the hospital. She was operated upon the same night. The child, a fully developed living male, was lying in the peritoneal cavity, enveloped in its membranes and also at its lower part by the remains of the ruptured sac. The child was extracted and as much of the membranes and cord as possible was cut away, the placenta being left and the abdominal wound entirely closed. The patient's condition remained satisfactory until the twenty-fourth day, when she had a rigour, followed by vomiting and a rise in the temperature and pulse-rate. It being evident that there was some septic absorption going on, the abdomen was reopened on the twenty-sixth day and the placenta removed. There was little or no hæmorrhage, but in the remains of the amniotic cavity there were 8 to 10 fl. oz. of purulent fluid, and the stump of the cord and the amniotic covering of the placenta had the odour of commencing decomposition. On laying open the umbilical vein and its tributaries, soft, breaking-down, purulent blood-clot was found in them. There was no evidence of suppuration in the substance of the placenta.

The patient on being placed in bed became suddenly faint and collapsed; she revived a little under saline intravenous transfusion, but again fell into a state of collapse and died 7½ hours after the operation. The post-mortem examination showed no evidence of hæmorrhage or peritonitis.

The child continues to be alive and well.

I attribute death to the shock of the second operation acting on a dangerously debilitated patient. It is my intention in any future case to remove the amnion and cord *completely* at the time of the extraction of the child.—*The Medical Week*, August 17, 1894.

On the Treatment of Salpingo-Ovaritis by Ignipuncture.—RAQUIN, in a recent thesis, defends the conservative treatment of these cases, following the lead of Pozzi (and Martin), and says that often puncture of the little cysts

with the thermo-cautery is followed by quite as good results as the total removal of diseased organs. Sclero-cystic degeneration of the ovary and diffuse ovaritis are regarded as suitable cases for ignipuncture, provided the tube be permeable.

The technique of the operation is simple enough. After opening the abdomen with a small median incision, the coils of intestine are shoved up by means of a compress and the adnexa sought for. Any adhesions are broken up, and the tubes and ovaries are drawn up into the wound. The wound is then catherized by introducing a stylet into the fimbriated end as far as the cornu of the uterus.

Should one find large, pale, œdematous ovaries, the point of the cautery is made to penetrate the œdematous stroma as many times as the degree of increase in volume and the œdema render necessary. Should there be cystic degeneration, the little cysts are opened one after the other with the cautery and their inner walls cauterized. Sometimes a little hæmorrhage follows. This is easily controlled by a catgut suture or so.

If indicated, hysteropexy should be performed.

There is no danger in the operation. It gives good results, but sometimes fails in hysterical patients in whom. very likely, castration would have produced no better cure,

Seven cases are reported.—*Presse Médicale*, August 18, 1894,

Intraperitoneal Treatment of the Stump in Myomectomy.—LEOPOLD, at the end of an interesting paper with the above title, sums up the results of all the cases of myoma upon which he has operated since 1889-90: Enucleation by the vagina, 46 ; mortality, 0. Castration, 40 ; mortality, 2 ; 5 per cent. (1 sepsis, 1 heart failure). Myomectomy with intraperitoneal treatment, 21 ; mortality, 0. Myomectomy with extra-peritoneal treatment, 29 ; mortality, 2 ; 6.8 per cent. Vaginal total extirpation, 24 ; mortality, 0. Total, 160 ; mortality, 4 ; 2.5 per cent.—*Centralblatt f. Gyn.*, No. 26, 1894.

Pathology and Treatment of Pelvic Abscess in Women, with Especial Reference to Radical Operation by the Vagina.—LANDAU, *Archiv. f. Gyn.*, 1894, Band. xlvi., Heft. 3. After a thorough study of the causes of pelvic suppuration and the methods of infection, L. reports 141 laparotomies in which he performed salpingo-ectomy, with a total mortality of 2.8 per cent. These cases were divided as follows :

Pyo-salpinx, 63 ; hydro-salpinx, 38 ; both pyo- and hydro-salpinx, 6 ; non-purulent salpingitis, 10 ; tubal pregnancies, 24.

As to the end results he regards sixty to seventy per cent. as permanently cured. While these statistics are very good, he recognises that many cases treated by laparotomy are not completely successful. Under certain conditions of complicated abscess formation, L. greatly prefers vaginal radical operation, *i.e.*, the removal of the uterus and its appendages by the vagina. He gives at length the clinical histories and the details of the operations on thirty such cases, all successful and, as he claims, permanently cured.

His masterly study of the subject is wound up by the following *résumé :*

1. Abscesses occurring in one side of the pelvis where we have to do with a single point of softening, incision is indicated ; by way of the vagina should the abscess be in that neighbourhood, by way of the abdominal walls, especially in the subinguinal region, should the seat of the abscess be near them. Should the abscess reach from the vagina to the abdominal walls, healing is hastened by incision, both below and above, and drainage. A counter-opening is, however, in general not necessary. The question whether the abscess is intra- or extra-peritoneal or intratubal has no influence on recovery, so long as the abscess is only unilocular. Should incision prove ineffective, resection of the uterus is strongly indicated.

2. In the case of recurring multilocular abscess in unilateral multilocular pyo-salpinx, the only thing to be con-

sidered is laparotomy with removal of the affected appendages. If, and this is generally to be recognized only during the operation, there is at the same time present an extra-peritoneal abscess (generally of the subligamentary type), this should be drained from the vagina and the abdominal cavity closed.

Should, however, contrary to expectation, upon opening the abdomen, it be found that the appendages on the other side are diseased, we should proceed as under Section 5.

3. In the case of bilateral disease and unilocular abscess on both sides, incision by the vagina or the abdominal walls is permitted in accordance with the principles laid down in Section 1. This attempt at cure (even in the case of pyosalpinx duplex unilocularis), even if unsuccessful, is not prejudicial to other operations should they later become necessary, and may possibly be successful.

4. In the case of bilateral disease and multilocular pus sacks, such as multiloculor pyo-salpinx, etc., laparotomy with extirpation of the adnexæ on both sides is certainly admissible ; but the operation does not guarantee a permanent cure. Far better in these cases

5. As in the case of bilateral disease and complicated multilocular pyo-salpinx with or without the formation of fistulæ, with multiple intra and extra-peritoneal abscesses and in cases of all the simple abscesses, in which more conservative attempts have proved unsuccessful, is the radical operation, *i. e.*, the extirpation of the uterus and its adnexa, in other words, the emptying of the pus cavities and the removal as far as possible of all the walls of the abscesses per vaginam.

6. This radical operation by way of the vagina is performed by aid of forceps and morcellement, and the operation is a relatively safe one and gives excellent results.

7. According to my own experience the extirpation of everything that is diseased should be by the vagina. Should this be impossible, at once, on removing all that is

possible by the vagina, a laparotomy should be done and the operation so completed.

8. In certain cases, even before the attempts at vaginal extirpation are made, careful examination will have made clear the difficulty or impossibility of removing per vaginam all that is diseased. In these cases, and especially in those in which the diagnosis has not made certain whether the process is bilateral, the combined operation should be determined upon from the beginning. When in doubt whether one has to do with a bilateral suppuration, of course one would begin with a laparotomy. When it is probable, even if it is not certain, that the extirpation of all the diseased tissues is possible per vaginam, the extirpation should be begun from below.

In cases where examination makes completion of the operation by the vagina improbable, as, for example, pus sacs lying high up and forward, the operation should be begun by a laparotomy and the freeing and possibly removal of the adnexa from above, but the removal of the uterus must be performed under all circumstances per vaginam.

9. In these cases of combined operation L., for drainage, leaves the vaginal wound wide open, and also uses in the abdominal incision a glass drainage tube for three or four days.

10. Favorable experience with the radical operation as regards its success, and the complete cure of complicated abscesses, make it advisable also in uncomplicated suppurative diseases of both appendages in these cases in which, up to now, it has been regarded as enough to remove the affected appendages and leave the uterus, as, according to the experience of almost all operations, absolute cure is not assured by the old treatment.

11. It is strongly urged that more weight should be laid upon the diagnosis as to whether the affection be bilateral before the so-called exploratory incision through the abdominal walls or the vaginal vault, so that women shall not be mutilated on account of the certainty and relative safety

of the " hystero-salpingo-oöphorectomia vaginalis," whom it would have been possible to have cured by more conservative means.

12. It is strongly urged that vague terms, such as pelvic suppuration, inflammatory disease of the appendages, etc., should be avoided, in order that statistics of real value may be collected, and that such terms should be replaced by ones referring clearly to the seat of the suppuration.

Correspondence.

A CORRECTION.

To the Editors of THE MONTREAL MEDICAL JOURNAL.

SIRS—In your report of the proceedings of the last meeting of the Canadian Medical Association, held at St. John, N. B., in August last, I am credited with having said in the discussion on appendicitis that "the most extreme mortality after these operations was only about two per cent." From the context one can only infer that this statement applied generally to all operations for appendicitis. Such a statement is certainly not justified by facts and, so far as I know, no such claim is made by any operator. In the paper which gave rise to the discussion I reported forty cases operated upon with three deaths, a mortality of seven and a half (7½) per cent., which I considered very low for acute cases operated upon during the attack. What I said was that "*in cases operated upon in the intervals between the attacks the mortality did not exceed two per cent,*" a distinction apparently overlooked by your reporter. Will you kindly publish this correction in your next issue, as the misleading statement has been made, not only in your journal, but in every published report of the meeting which I have seen.

JAMES BELL.

Montreal, October 6th, 1894.

Reviews and Notices of Books.

Atlas der Krankheiten der Mundhoele, des Rachens und der Nase. In 31 farbigen Tafeln dargestellt von Dr. med. L. GRUENWALD. Price M6. Muenchen: J. F. Lehmann.

This little atlas contains a number of well executed drawings representing the most common affections of the mouth, nose, naso-pharynx and pharynx. The drawings are coloured and represent very well the actual conditions seen in the cases described. This atlas will be found to be a handy reference for the student when accompanied with a small manual of diseases of the nose and throat.

The Pocket Anatomist. By C. HENRI LEONARD, A.M., M.D., Professor of Gynæcology Detroit College of Medicine. Leather, 300 pages, 193 illustrations; post-paid $1. Detroit: The Illustrated Medical Journal Co.

This is the eighteenth edition of this handy little work, which has been so popular both in England and this country. It is bound in flexible leather and, the paper being thin, it can be easily carried in the pocket. It is very complete and most fully illustrated, the illustrations being photo-engraved from Gray's Anatomy, English edition, and therefore are as correct as can be. The student will find it a useful little volume to carry about with him to "read up" whenever he has a few spare moments.

A Manual of Human Physiology: Prepared with Special Reference to Students of Medicine. By JOSEPH H. RAYMOND, A.M., M.D., Professor of Physiology in the Long Island College Hospital, and Director of the Hoagland Laboratory. Pp. 382; $1.25. Philadelphia: W. B. Saunders. 1894.

This book is written with the idea of presenting the main facts and principles of physiology as concisely as possible. The style is clear and some parts of the book cover their ground very satisfactorily, notably the chapter on physiologi-

cal chemistry. But a text-book of physiology where we look in vain for an account of muscle, where we find the larynx dismissed without reference to the function of speech and where the nervous mechanism of circulation is relegated to the hazy background, seems somewhat of an anomaly.

A Manual of Modern Surgery, General and Operative. By JOHN CHALMERS DACOSTA, M.D., Demonstrator of Surgery, Jefferson Medical College, Philadelphia. W. B. Saunders, Philadelphia. 1894.

This volume belongs to a series now being published by Mr. Saunders especially for the use of students. If this work is a sample of the whole series we can predict success for the venture. The author has written his part in a manner most suitable to the needs of a student, and indeed the practitioner will find that a perusal of the work is not lost time. Quite a feature of the work is a summary of what to do in hæmorrhage, under the heading of "Golden Rules for Procedure in Primary Hæmorrhage," Here every form of bleeding is taken up and definite directions given for treatment; the student is not told what he may do, but what he is to do. And so throughout the book the indications for treatment are given positively. We notice, however, that Clover's ether inhaler is not mentioned, but only the Allis inhaler. Again, enucleation is omitted from among the methods of dealing with tumours of the thyroid gland, while other and more difficult methods are mentioned.

The work is fully illustrated and well printed, and altogether is a very complete and useful manual.

Transactions of the American Surgical Association. Vol. XII. 1894.

The volume contains the following articles:

Address of the President, J. Ewing Mears, M.D.

The Surgical Treatment of Empyema. By John Ashhurst, Jr., M.D.

Amputation of the Entire Upper Extremity (Including the Scapula and Clavicle) and of the Arm at the Shoulder-Joint, with Especial Reference to Methods of Controlling Hæmorrhage; with a Report of One Case of the Former Amputation and Four of the Latter. By W. W. Keen, M.D.

Amputation at the Shoulder-Joint. Hæmorrhage Controlled by Wyeth's Pin Transfixing One Flap, and Elastic Pressure. By Oscar H. Allis, M.D.

Methods of Teaching Surgery. By John S. Billings, M.D.

The Teaching of Surgery. By John Chiene, M.D.

The Surgery of the Kidney. By Louis McLane Tiffany, M.D.

The Surgical Treatment of Surgical Kidney. By Robert F. Weir, M.D.

Surgery of the Ureter. By Christian Fenger, M.D.

Treatment of Inoperable Malignant Tumours with the Toxines of Erysipelas and the Bacillus Prodigiosus. By William B. Coley, M.D.

Erysipelas: Has the Streptococcus Erysipelatosus an Antagonistic and Curative Effect upon Local Tuberculosis? By DeForest Willard, M.D.

Strangulation of Meckel's Diverticulum Caused by Volvulus of the Ileum. By J. W. Elliot, M.D.

Mooted Points as to fractures of the Arm. With Notice of an Improved Splint. By J. McFadden Gaston, M.D.

The Removal of Stone-in-the-Bladder. By William S. Forbes, M.D.

Indigo Calculus from the Kidney. By William S. Forbes, M.D.

Extirpation of the Larynx. By William H. Carmalt, M.D.

Thyroid Abscess; Thyroidectomy; Recovery. By Joseph Ransohoff, M.D., F.R.C.S.

Venous Tumour of the Diploe. By Lewis L. Pilcher, M.D.

Some Surgical Cases. Fracture of the Surgical Neck of the Humerus Complicated by Dislocation of the Head beneath Coracoid Process. Cure of Extensive Varicose Condition of Long Saphenous Vein by Complete Excision. A New Operation for Torticollis. Inversion of the Uterus Complicated by a Polypus Attached Symmetrically to the Fundus; Exploratory Laparotomy; Subsequent Removal of the Polypus and Reduction of the Inversion. By Charles Burnham Porter, M.D.

Treatment of Urethral Vegetations by Means of a Circular Cutting Curette. By John B. Deaver, M.D.

Extra-Uterine Pregnancy and Pelvic Hæmorrhage. Cases and Remarks. By H. M. Richardson, M.D.

A System of Legal Medicine. By ALLAN MCLANE HAMILTON, M.D., and LAWRENCE GODKIN, Esq. Vol. I; 657 pages. New York: E. B. Treat.

The first half of this work contains articles on Medico-Legal Autopsies, by A. T. Barstow, M.D.; Death in Its Medico-Legal Aspects, by F. A. Harris, M.D., and C. A. Hibbert, M.D.; Blood and Other Stains—Hair, by Prof. Babcock; Identity of the Living, by McLane Hamilton; Identity and Survivorship, by B. W. Cordoza; Homicide and Wounds, by Lewis Balch, M.D.; Inorganic Poisons, by C. E. Pellow; Alkaloid Poisons, by Walter S. Haines, M.D.; Ptomaines and Putrefactive Verdicts, by V. C. Vaughan, M.D.; Life Insurance, by Brandreth Symonds, M.D., C. T. Bishop and W. A. Purrington; Indecent Assault on Children, by W. Travis Gibb, M.D.

Most persons who have had to write encyclopædic articles upon well-worn topics begin the work with the expectation of producing something new in matter or arrangement, but towards the close of their labours recognize with regret that what they have written is very much what anyone else would have written under the circumstances. This does not apply to the volume under consideration, and one is at once impressed with the fact that the articles in it bear the stamp of personal experience and are not compilations. Of a large number of interesting observations published here for the first time the details of the expert examinations in the Whitechapel murders will probably be found most interesting, but throughout the authors have supported their statements by cases of their own. This mode of treatment makes very interesting reading and it is refreshing to meet with a book of this description upon a subject which is usually treated by compilation. The disadvantage is that the topics are treated somewhat unequally, as for instance when we find 42 pages devoted to arsenic and only 40 to all other inorganic poisons. In the chapter on blood no mention is made either of the carbon-monoxide or such hæmoglobin structures, nor is chlorate of potassium poisoning referred to anywhere. The article by Vaughan on purefactive changes is full of interest and he calls attention to the following observation, which will be new to most chemists and is not recorded in any of the standard text-books, showing that arsenic may become volatilized and so

disappear from putrefying organs under the influence of anaerobic putrefaction:

"It has already been shown that the presence of arsenic does not interrupt the anaerobic putrefaction. Some of the putrefactive fluid from the decomposition of a chopped liver contained a considerable amount of arsenic. This fluid was placed in a bottle and kept in the laboratory for six months. During this time the bottle was frequently opened and whenever this was done a large quantity of gas escaped with almost explosive rapidity. After the above mentioned time it was decided to estimate the amount of arsenic in the fluid. Upon attempting to do this it was unexpectedly found that the fluid contained not the slightest trace of arsenic; in other words the arsenic had been given off from the fluid in the form of a gas. It was supposed at first that this was a new discovery, but upon looking up the matter it was found that Hunepild in the early part of the present century had found that tissues impregnated with arsenic gave off during putrefaction a garlic odour and that later arsenic disappeared wholly from the tissue." Prof. Vaughan also discusses the putrefactive substances which simulate vegetable alkaloids.

The book is well printed and bound and should be in the hands of all who are interested in legal medicine.

Bibliography.

The Modern and Humane Treatment of the Morphine Disease. By J. B. MATTISON, M.D. Reprint from *Medical Record*, December 23, 1893.

Can Physicians Honourably Accept Commissions from Orthopedic Instrument Makers? By H. AUGUSTUS WILSON, A.M., M.D. Reprinted from *The Philadelphia Polyclinic*, 1894.

Morphinism in Medical Men. By J. B. MATTISON, M.D. Reprint from the *Journal of American Medical Association.*

Transactions of the Medical and Chirurgical Faculty of the State of Maryland. Ninety-sixth Annual Session.

Le Musee Social. Par M. E. CHEYSSON.

Societe du Musee Social. Reconnue d'Utilité Publique.

Canadian Medical Literature.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL.]

PERIODICALS—SEPTEMBER, 1894.

CANADIAN PRACTITIONER.

(1.) Address of the President of the Canadian Medical Association —T. S. S. Harrison, Selkirk, Ont.

(2.) Potassium permanganate, the new antidote to morphia—G. Chambers, p. 646.

The Eleventh International Medical Congress—E. E. Kitchen St. George, Ont., p. 650.

Phlegmon of the hand—H. Morrell, Slayton, Minn., 657.

CANADA MEDICAL RECORD.

Two herniotomies in a child under five years of age—Bassini's method, p. 265.

CANADA LANCET.

(3.) Notes from cases of abdominal section, with remarks—H. H. Meek, London, Ont., p. 1.

Treatment of Endometritis—H. E. Hayd, Buffalo. N.Y., p. 6.

The importance of early attention to the disability caused by infantile paralysis—A. S. Judson, New York, p, 8.

ONTARIO MEDICAL JOURNAL.

Editorials on the Ontario Medical Council election.

L'UNION MEDICALE DU CANADA.

(4.) Monstruosité par Défaut—L. J. O. Sirois, St. Ferdinand d'Halifax, p. 449.

DOMINION MEDICAL JOURNAL.

Some practical hints in the recognition and treatment of diseases of the skin—L. Duncan Bulkley, New York, p. 69.

(1.) Address of the President of the Canadian Medical Association —Dr. Harrison.

OCTOBER—1894.

CANADIAN PRACTITIONER.

Intestinal obstruction following operation in which the peritoneal cavity is opened—G. H. Rose. Catonsville, Md., p. 719.

Some facts and fallacies in medicine—R. A. Reeves, Toronto, p. 650.

The chemical importance of ptomaimes or cadaveric alkaloids in medico-legal analysis—W. B. McVey. Boston, Mass.. p. 735.

(5.) The prevention of tuberculosis—J. P. Macdonald, Hopewell, N.S., p. 740.

Abdominal hysteropexy—K. N. Fenwick. Kingston, Ont., p. 744.
Medical practice in Korea—O. R. Avison, Seoul, Korea, p. 771. (Correspondence.)

CANADA LANCET.

The study of anatomy—D. J. Gibb Wishart, Toronto, p. 37.
Neurotic complications in La Grippe—Stephen Lett, Guelph, Ont., p. 41.
Hydronephrosis of one kidney and atrophy of the other—A. McPhedran. Toronto. p. 42.

DOMINION MEDICAL MONTHLY.

Influence of the mind upon the body—Dr. Bayard, St. John, N.B., p. 105.
Cases of septicæmia following induced abortion—A. R. Atherton. Toronto, p. 112.
Lengthened sittings in litholopaxy—J. Francis Tweed, Dorchester, N.B., p. 115.
A case of refracture of Femur—J. A. Ivey, Cobourg, p. 116.

MARITIME MEDICAL NEWS.

Notes on convulsive seizures—W. H. Hattie, Halifax, N.S., p. 389.
(6.) A Case of interscapulo-thoracic amputation for chondro-sarcoma of the shoulder joint—F. J. Shepherd, Montreal, p. 394.
Reminiscences of the late International Medical Congress at Rome—W. Tobin, Halifax, N.S., p. 395.

(1.) This address appeared also in the September number of this JOURNAL (page 162.)

(2.) This paper consists of a series of experiments performed for the purpose of ascertaining the action of permanganate upon morphine, and from which the author concludes that :

1. Potassium permanganate in dilute solution, not stronger than gr. i to the ounce, may be given by the stomach without danger.

2. Potassium permanganate, grain for grain, completely decomposes morphine, the decomposition occurring in acid media more rapidly than in a neutral medium.

4, Foodstuffs and acetic acid do not interfere with the decomposition.

5. Potassium permanganate is an efficient antidote if taken while the morphine is in the stomach.

The question still remains as to whether potass. permang. is of therapeutic use after the morphine is absorbed into the system, but the author infers that small repeated doses

would be of value, as it has been proved conclusively that morphine introduced subcutaneously into the system is excreted into the stomach.

(3.) These notes are upon four cases of more than usual interest :

Case I. A large dermoid cyst of the left ovary and a small dermoid of the right.

Case II. Ruptured tubal pregnancy on left side, complicated by a ventral hernia in the cicatrix, following a previous abdominal section for tubal pregnancy of the right side.

Case III. Suppurative appendicitis and acute peritonitis. Incision and drainage, followed twenty-three days later by a discharge of the gangrenous appendix through the abdominal wound.

Case IV. Tumour of the pylorus and duodenum causing stricture, gastro-enterostomy with Murphy's Button. The operation was performed on 23rd April, and up to the date of publication the button had not been found.

(4.) The fœtus was of seven months, and of ordinary size. The head, neck, upper and lower limbs were normal, but the whole of the anterior thoracic and abdominal wall consisted of a thin transparent membrane like the ammotic sac. There was no trace of a diaphragm, the heart and lungs seemed to have no other attachment than to the aorta. The liver was of an enormous size, but the stomach, intestines and kidneys seemed normal. There were no traces of genital organs, bladder or anus. The umbilical cord was only 2 inches long and had been broken during the birth. The child lived a few minutes. The mother had given birth to deformities on two former occasions, the first being hydrocephalic, and the second having had spina bifida and club feet.

(5.) As a preliminary to any system of prevention, it is necessary to educate the public as to the contagious nature of the disease, how to avoid contracting it, and to teach those who have it how to avoid transmitting it to others.

This may be done by making use of the "secular press" and by organizing "societies for the prevention of tuberculosis." Then we want legislation: (1.) A system of registration of all cases of disease as soon as it manifests itself. (2.) A careful system of disinfection of all infected buildings, private as well as public, and all public conveyances. (3.) Government inspection of infected places, all dairies and slaughter houses. (4.) Establishment of special hospitals for the reception of the infected poor. (5) The enactment of laws to prevent the infected from spreading the infection.

The author strongly deprecates the practice of sending cases of tuberculosis, which have reached the second stage, away from home, as being not only useless and often cruel, but as being the most effective method of spreading the disease.

(6.) This case was shown before the Montreal Medico-Chirurgical Society, Oct. 28th, 1892. (Mont. Med. Journal, Vol. 21, pages 210-527.)

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Annual Meeting.

The twenty-fourth annual meeting was held on Friday, October 5th, 1894, Dr. JAMES BELL, President, in the chair.

The members present were: Drs. Wm. Gardner, G. P. Girdwood, A. Proudfoot, James Perrigo, J. B. McConnell, J. Chalmers Cameron, F. Buller, T. Wesley Mills, D. F. Gurd, J. A. Macdonald, G. T. Ross, Thomas D. Reed, James Stewart, J. Alex. Hutchison, F. R. England, H. S. Birkett, A. W. Gardner, E. H. P. Blackader, H. A. Lafleur, J. H. B. Allan, D. DeCow, J. H. Bell, J. A. Springle, G. Gordon Campbell, James M. Jack, J. G. McCarthy, J. Leslie Foley, F. A. L. Lockhart, J. A. Macphail, D. J. Evans, W. S. Morrow, A. E. Orr, H. D. Hamilton, H. B. Carmichael, C. F. Martin, George A. Berwick, S. Ridley Mackenzie and Kenneth Cameron.

The minutes of the last annual meeting were read and confirmed.

Dr. J. M. JACK, the Treasurer, reported that there was a balance of $218.44 on hand, the receipts having been $1,228.53 and the expenditure $1,010.09.

Dr. KENNETH CAMERON, Secretary, reported that at the beginning of the session there were 117 ordinary members, 15 new members were elected, 1 died and 1 resigned, making a present total of 130; of these 114 are resident and 16 non-resident.

The number of temporary members had been greatly increased by the election of the resident staff of the Royal Victoria Hospital, the total membership now being 16. No honorary or corresponding member was elected.

Twenty regular meetings were held with an average attendance of 33.25 members per meeting, or an increase of

2.25 members per meeting over last year, The largest attendance at any meeting was 48 and the smallest 13 members.

Dr. T. D. REED. the Librarian, read the following report:

Considerable difference of opinion existed as to the desirability of placing the library and reading room in a different story of the building from the meeting room; the separation has now been accomplished for a year, in our present quarters, and each member can form his own opinion of the change.

The number of readers may be considered to have been about the same as previous years; exact statement on this point cannot be made, as members have access at will to the room by private key and leave no record of attendance.

The journals have been maintained as before and the valuable series of London, Philadelphia, New York and Montreal publications have been kept up by binding.

There are now on the table 4 weekly and 30 monthly journals.

No additions to the library by purchase have been made, as the Council has not appropriated any money for the purpose. It is very desirable that the Society should arrange for an annual appropriation for the purchase of the new encyclopedias, dictionaries, practices and other works of reference, which everyone would like occasionally to consult.

We are indebted to Dr. Blackader for a valuable series of *Braithwaite's Retrospect.*

To Dr. Smith and others our thanks are due for numerous medical journals.

The new room, though small, has been found comfortable and sufficiently commodious for the present.

The following officers were elected for the ensuing year.

President—Dr. G. P. GIRDWOOD.

1st Vice-President—Dr. J. B. MCCONNELL.

2nd Vice-President—Dr. J. ALEX. HUTCHISON.

Secretary—Dr. G. GORDON CAMPBELL.

Treasurer—Dr. J. M. JACK.
Librarian—Dr. F. A. L. LOCKHART.
Council—Drs. JAMES BELL, PERRIGO and SHEPHERD.

Dr. JAMES BELL, the retiring President, then read the

ANNUAL ADDRESS.

The Constitution and By-Laws of the Montreal Medico-Chirurgical Society demand of the retiring President that "He shall present at the annual meeting a written address, which shall include a resumé of the work done during the year."

You have already heard from the report of the Secretary that we have now a larger membership and that we have had during the year just ended a larger attendance, both average and minimum, than ever before. From the Treasurer we have learned that notwithstanding our more commodious and more expensive quarters and the great expenses incurred in fitting them up for occupation, we have a surplus of over $200 at the end of the year. This is undoubtedly due largely to the adoption by the Society of better business methods (as well as to the energy of the Treasurer), but it must also be taken to indicate a greater and more genuine interst in the Society by the profession at large. These facts speak for themselves and constitute an effective answer to those who feared that in taking these rooms which we at present occupy we were launching out upon a scheme of extravagance which would ruin the Society.

Turning now to the professional work of the Society during the year, I find that it may be summed up as follows: There were 9 papers and 9 case reports read, 19 living cases exhibited, and upwards of 73 specimens presented. Besides these, 3 demonstrations were given which are not included in any of the above headings.

What instantly strikes one in this very condensed resumé of the professional work is, that while on the whole there was no dearth of work, there were only 9 papers given in 20 meetings. Following up this analysis we find

that among 142 members and an average attendance of 33.25, 25 names only appear as contributors during the year. Moreover, the discussions have been confined to a small proportion of the members present at any meeting. This, I fear, is the weak point of the Society, and I trust that the members will pardon me for calling attention to it. With every department of medicine represented on our programme, as they have been—clinically and pathologically—medicine and surgery, gynæcology and obstetrics, ophthalmology, otology and laryngology, and with such a wealth and variety of material presented it seems strange that lack of discussion should be a feature of our meetings. I am sure that I voice the sentiments of the older members and of those who have been the main contributors in the past when I say that we would gladly see the younger members take a more prominent part in the preparation and the discussion of papers. Let it not be thought for a moment that here some are teachers and some are students, rather let it be understood that all are students and all may be teachers; that here we meet on common ground for mutual benefit and for the advancement of our profession. We have abundant facilities, let us have active professional work in the Society from every member, young and old. This is all that is needed to make our Society a great power in the land. In fact it is already a great power, and we can look with pride upon the part which it has recently played in several great public reforms, notably the reform of the national quarantine system within the last two years. In making this statement I do not wish in any way to detract from those who were more directly responsible for the reforms mentioned, but simply to state the fact that this Society did not stand aloof but took a firm and uncompromising position in support of the movement for reform.

The discussion of matters concerning the health of the public and the welfare of the profession I conceive to be an important function of this Society. Further, a more

active interest among the members must rapidly develop a higher class of work—collective investigation, formal discussions on important subjects in the different departments of medicine, committee investigations and reports on material presented at the meetings, and finally, as an outcome of all this, better arrangements for the editing and publishing of a volume of the Society's transactions annually.

There is another matter which I wish to specially commend to the thoughtful consideration of every member of this Society. A year ago we celebrated the fiftieth anniversary of the founding of the Society; to-night we are transacting the business of the twenty-fourth annual meeting of its second renaissance. Is not the time ripe for the establishment of a permanent home for the Society? We are domiciled here in our present quarters for four years more, and although at this moment I know of no scheme on foot, or even suggested for the purpose, it does not seem to me that it need be looked upon as entirely utopian to hope that before our present lease has expired such a scheme should at least be well under way. Of course it means money, and I know too well that no large sum of money could be raised among the members of this Society, but this fact need not be fatal to the project. We see hospitals, schools, libraries and institutions of all kinds grow up around us, not only in Montreal, but elsewhere, from public and private benefactions, in many cases directly influenced by medical men. Why may we not hope, if the want is made known, that some public spirited citizen will in the near future build such a monument to his memory? Such an institution will certainly be founded in Montreal sooner or later. Such institutions already exist and have long existed in all great medical centres, even in this, the new world. I have not inquired into the histories of the different institutions of this kind, but I was greatly impressed by the fact, noted during a recent visit to Philadelphia, that the Academy of Medicine

of that city is now nearly two hundred years old. What we want is a permanent abode, not only for our meetings, but where we may establish a library and a museum for reference, and preserve pictures and mementoes of the great lights of the profession to stimulate us and those who come after us to greater efforts and better work. In conclusion, gentlemen, I beg to tender you all my sincerest thanks for the honour which you conferred upon me a year ago by electing me President of this Society, and for the confidence and support which you have since accorded me as its presiding officer.

Selections.

Dr. Brown-Sequard's Orchitic Fluid.—The death of Dr. Brown-Sequard has served to revive in some minds an interest in his orchitic fluid, in which the great physician had himself much hope. The *Lancet* in a recent number publishes some significant notes upon experiments with the fluid made by Dr. Guy M. Wood and Dr. A. J. Whiting, both physicians to the Hospital for the paralysed and epileptic, Queen's Square, London. The fluid was obtained directly from Paris, through Dr. Brown-Sequard's personal kindness. The injections were hypodermic, made with a Koch syringe, kept aseptic in absolute alcohol. The dose was from one gramme of the fluid to six grammes, and in all but three cases, diluted with an equal quantity of water. Except when the doses were large, no immediate effects were perceptible. In those some pain was felt at the point of injection. Twenty-three patients were treated. In eighteen cases there was no change from the treatment; three patients were slightly better; two were worse. At the beginning of the observations several patients said they felt better after the injections. At the suggestion of Dr. Buzzard, two women were given daily injections of two grammes of distilled water only, for three weeks. Both the patients declared that they felt decidedly better after each treatment, though of course there was no change in the physical condition. The physicians, therefore, conclude that in all the cases treated, the sensation of being better was due to the mental effect of the injection and not to the orchitic fluid, and they do not think that the results obtained warrant any further trial of the remedy.—*Scientific American.*

The Utility of a Billy Goat.—No doubt our title would suggest to some of our readers pleasant reminiscences of driving pairs or even tandems. To some of our city denisons to whom the promiscuous collections to be seen on certain

vacant city lots are familiar, the idea might naturally occur of Billy-goat performing the work of the scavenger by feasting upon old shoes, empty tomato cans, etc. The few who in early life may have fed upon goat's milk will think kindly of this phase of the animal's utility. But in the popular mind it is through the skin of the goat and the kid that the species of animal renders himself most useful to man.

It is, however, from a far different stand-point that the utility of the goat has in recent years come to be viewed by sanitarians, and of late even by therapeutists.

The stubborn resistance which the goat has so often been known to oppose to the will of his youthful master is but slight, indeed, in comparison to the force and tenacity with which he resists the infectious power of tuberculosis. In fact, the goat has been found by observation and experiment to enjoy a degree of natural immunity against tuberculosis so high that it may be regarded as one of the domestic animals which is practically free from any tendency to this disease. For this reason the goat has recently come into prominence as one of the domestic animals capable of rendering a number of most valuable services to man.

In the first place, it has been amply shown that the goat is capable of propagating the vaccine virus against small-pox in the same manner as is the young heifer, a fact of no little consideration now-a-days when the opponents of vaccination are unscrupulously or insensately using any and every means to prejudice the populace against the employment of vaccination as a protection against small-pox. Then again, the goat is now used successfully for the propagation of a protective, and even a curative virus for such deadly diseases as diphtheria and tetanus (commonly known as lock-jaw).

From the familiar position of a somewhat despised though serviceable domestic animal, Billy-goat bids fair very soon to be elevated to the rank of one of the greatest benefactors of the human race.—*The Dietetic and Hygienic Gazette.*

Did You Ever Notice—That putty women expect to have porcelain children ?

That discontent is a disease which change of climate cannot cure ?

That marriage develops antagonisms as well as compliances, and needs common sense in an uncommon degree ?

That nature effaces legality, and determines whether acquired kinships shall hold good in fact as they assume to do in law ?

That the nostrum advertisement creates the symptoms which the nostrums cures ?

The " practical" people are often the biggest fools ?

That the philosophy of results can never be established until all the returns are in ?—the relief of pain within three minutes is only the voice of the nearest precinct.

That doctors sometimes dispense because they can't write an intelligible prescription ?

That the fee of the specialist is, alas, sometimes his most lasting memorial in the mind of his patient ?

That the great riddle which most people are trying to solve is, how to dance without paying the piper ?

That the " blows which patient merit of the unworthy takes" are serviceable when the recipient builds them into the fabrics of his philosophy ?

There is no fool like an old fool, *because* practice makes perfect ?

That though politics is always " turning the rascals out," the politician is never out of a job—that is to say, the supply of rascals to be turned out is always equal to the demand of the campaign thunder-manufacturer ? If this is not perpetual motion, what is it ?

That the velvet paw of the soliciting doctor resembles the tiger's in more ways than one ?

That the philosophy of the nostrum-prescriber is : " Where no one knows, all have an equal right to guess." Considering its quality, isn't this professional wisdom rather high-priced ?

That men are unique in their troubles, but profoundly alike in their genuine consolations ? Life is more real than any of its forms.

That " love," " patriotism," " faith," and other words of

deep significance, are often made to do duty for their exact opposites? This is as ghastly as the application of cosmetics to the dead.

That those who rail most vociferously at medicine are among the first to telephone for the doctor?

That the knowledge of pertinent facts will always confer advantage? The rest of the play is ingenuity and farce.

That the brunt of the greatest effort of nature toward sustaining the equilibrium of supply and demand is laid upon the babies; and, like Greek grammar, they exhibit more exceptions than examples of the rule?

That nature is frank, and hypocrites are her pathogenic micro-organisms? Their art is to be so small that the microscope of investigation cannot find them out—but pathology results, nevertheless.

That nature makes a desperate effort to remedy her blunders every time she brings a baby into the world? If the children did not inherit more of the virtue than the vice of their ancestry, the race would long ago have become extinct. Yet this is a coward's excuse for burdening the unborn with mortgages to disease and sin.—*The Medical Age*, Oct. 10, 1894.

The Guardian Angel of the Ambulance.—Strange, passing strange that the ambulance surgeon should have such burdens thrown upon his much-enduring shoulders. Each time that the clangor of the well-known bell announces his passing we look up and wonder what ills he is bent on relieving, we think that his presence is one of the most shining marks of that loftiest degree of civilization which is based upon mutual help. Yet the sensational-questing reporter, that autocrat of our breakfast table, when hard pushed for canvass whereupon to bedaub his gaudy pigments, has been known to seize upon the ambulance surgeon. His pen-chromos have depicted the man at the back of the ambulance as one who is haughty and puffed up with a sentiment of his importance, as one who at times commits grave errors, who scorns the disinterested advice of eager bystanders, is heedless of suffering and impervious to sorrow, and finally, and without benefit of clergy, is guilty, oh anathema! of being young.

Ours the privilege of defending him from these odious charges! Ours the hand to lead him to his real position in the esteem of a generation whose vision, though prone to refractive errors, can commonly be corrected by means of proper glasses.

Haughty, forsooth! Because the jolting of his chariot fails to disturb the serenity of countenances that mirrors a restful conscience. He has been known to err! Let the providers of so-called "scoops" pick up their stones. They never get blown up by the night editor, and have all been preserved in the spirits of just men made perfect. The ambulance surgeon harkeneth not to the crowd's advice. He hath been known to firmly reject the proffer of the usual luscious quid of fine cut wherewith to bind a wound, preferring, in his obstinacy, the golden-hued gauze that smileth to Heaven. He is heedless of suffering, since he prefers to irrigate with bichloride solution rather than with copious tears, and impervious to sorrow, since he can seldom be persuaded to attend the wakes of those for whom the ambulance proves an Acherontian bark.

But he is young. What plea can we advance in mitigation of this damning, but often truthful accusation? What is his excuse? Gentlemen of the jury, if length of whisker was a measure of merit and a badge of skill, where should we be? Consider the humble goat. He sows not, nor does he reap, and yet Greeley in all his glory was not in it with him. The ambulance surgeon, we say it without fear of contradiction, is often young through no fault of his own. Could he have hastened the nuptials of his progenitors, he would have done it, and could he have foreseen the reportorial attacks to which he was doomed, he might have forbidden the banns altogether. The ambulance surgeon of this city has been known to climb a steeple and, upon a few shaky boards poised at vertiginous heights, minister to one too badly hurt to be moved at once from his dangerous position. He goes down the holds of great ships for men that lie there crushed and bleeding; he has been made a target for pistols in the hands of crazed ones, tremulously aiming at ophidian hallucinations. Night and day he is at the beck and call of suffering humanity; in all weathers you hear his crash-

ing gong. We are glad that he is young and able to accomplish such things, and feel that his salary of nothing a day and clothe himself is more than earned. Suprising as a word of approval must be to him, we know that he can stand it, for he is used to emergencies and sudden shocks, and we hereby tender him the assurance of our most distinguished consideration.—*The International Journal of Surgery.*

Sad Mishap With Animal Extracts.—In a number of published papers I have urgently advocated giving honestly and fairly the record of our successes, as well as failures, of our blunders as well as our hits, in published reports of cases. The time has now arrived for me to put these precepts into practice, some very lamentable mistakes, not to use a stronger expression, having taught me a lesson that I shall try to profit by in the future, and which, I think, ought to be made known to the profession, in the hope that it may inure to the general good.

The blunder I wish to call attention to occurred recently in the preparation and use of the animal extracts so fortunately discovered by the late Dr. Brown-Sequard, of Paris, France, and so effectually developed by certain eminent physicians in our own country. After having carefully and diligently experimented for quite a lengthy period in the manufacture and use of these extracts, I came to the conclusion, from my results in the treatment of certain functional troubles, that I had accidentally hit upon an unusually excellent technique in the manipulation, and felt emboldened to try my hand in the treatment of some organic troubles.

One particular lot of the extract had proved so exceptionally efficient that I decided to adopt the method pursued in its preparation as a rule for my laboratory. Looking up the note of the method I had employed with it, I ascertained that in all essential particulars except one I had followed that of the high authorities now everywhere recognized in this connection. The exception had regard to the length of time given to the maceration. Instead of one year, the regulation time, I had left the

material in the macerating vats for eleven months, five weeks and eight days.

My first experiment was made with two black-and-tan setter dogs, who, in attempting to take charge of some blue-grass hay in the manger of a Kentucky thoroughbred stallion, had been set upon by that spirited animal and compelled to beat a hasty retreat, each with the complete loss of an ear. These canines were named, respectively, Ardotto and Scipio. Ardotto had lost his left ear and Scipio his right. As Ardotto had become quite vicious, and was also unkindly suspected by his neighbors of eating his mutton too fresh, I conceived the notion of killing him and feeding his ear to Scipio in the shape of aurine, or ear-extract, to be made according to my improved formula.

The result was marvelous. In the course of a few weeks after Scipio began taking the aurine thus prepared, an ear began growing rapidly from the old stump, and in a short time the appendage was fully restored. If there was any difference, it looked smoother and glossier than the other, and, indeed, though not noted at the time, it was an exact reproduction of the ear of the condemned Ardotto. I failed to take into consideration at the time that the dogs were twins, that they had lost opposite ears, and that they were both black-and-tan, all those coincidences being purely accidental. However, after a short time Scipio was unluckily run over by a street-car, and lost his left hind leg. Encouraged by my former successes, I began to look up a suitable dog that could spare a leg, or a leg that could spare a dog, with the view of preparing a quantity of legine, in the hope of restoring as before the lost member. The first dog brought was a strong, bench-legged cur, with a shaggy, well-curled tail. After the carcass had been divided ready for committing to the vats, it somehow failed to meet the fancy of my assistants as well as myself, so we threw it aside and substituted an animal that appeared to be a vigorous cross between setter and Newfoundland, using the right hand leg in the preparation of the extract.

An enterprising young friend, however, took it into his head to treat a bob-tailed dog belonging to his mother, with a pre-

paration of tailine, in the hope of restoring the missing member, and requested permission to prepare the extract in my laboratory from the tail of the rejected cur. To this I cheerfully consented.

After macerating our materials with scrupulous regard to the period we had adopted as our rule, viz.: thirteen months, five weeks and eleven days, my assistants went into the laboratory early in the morning, before it was fairly light, to get the legine to begin on Scipio's leg. Unfortunately, in doing so they cracked the glass jar containing it. The jar in which my young friend had prepared his tailine stood next to it, but was thought by them to be empty. Into this they hastily poured the legine and brought the jar into the operating-room, where the mixture was administered to Scipio.

At first things went on most gratifyingly. A leg began growing rapidly from Scipio's stump, and in a short time it was thought best to turn him out for exercise so that the new joints might be made supple. When he was brought out it was observed that the hair on his tail was becoming rather coarse and stiff, and it was noticed, too, that the tail had begun to turn over his back. At first, however, it was thought that this roughness of the hair was due to the fact that he had not been in a situation to have the toilet of his tail properly attended to, while the curling was attributed to pressure against the walls of the narrow kennel in which he had been confined. Both the curling of the tail and the state of the hair grew worse daily, and an investigation which was now set on foot developed the mistake by which the legine and the tailine had become mixed.

In a short time Scipio's tail had become markedly bushy and ugly, and eventually became curled so tight over his back that half the time his hind feet were lifted clear off the ground. This led to the discovery that the extract from some animals is prepotent as compared to others, for evidently the tail developing elements of the cur had predominated over those of Scipio. But poor Scipio's misfortunes did not end here. We had made the legine from the right leg of the mongrel, and the result was that a right leg grew on Scipio's left stump, and the dew claw

was on the wrong side. Furthermore, Scipio had always been a right-handed accelerator, that is, he had been in the habit of lifting his right leg whenever he felt inclined to moisten hat-racks, door-posts, and the like, and by a streak of ill-fortune the same had been the case of the mongrel. So, when it became necessary for Scipio to discharge the renal secretion both legs would begin bouncing up in the most tumultuous and unsymmetrical way, and this, with the tilting of the hind-quarters due to the tight-curling of the tail, made poor Scipio at such times a picture of confusion, shame and chagrin that could not but touch a tender spot in the bosom of the most unsympathetic.

Imagine the consequences if I had been treating a sensitive young lady, say a beautiful blonde, who had happened to lose her nose through infection from the kisses of too ardent a lover, and a similar blunder had been made! Imagine that noseine derived from the black, broad and flat proboscis of some glossy son of Africa had been used in the treatment, and worse still if worse can be, that some one making hairine from kinky shearings from the same source had got the extracts mixed as we did. I draw the veil!

Half the seigniorage in the national treasury would not suffice to meet the damages, especially if the jury should happen to take its cue from a verdict in a recent noted case at the national capital. I only venture this allusion in order to suggest the measure of gratitude that is due me for making this humiliating confession purely for the good of the profession, and bravely regardless of the fact that well-nigh universal success characterizes reports throughout medical literature.—LUKIANOS, in *The American Practitioner and News.*

THE

Montreal Medical Journal.

VOL. XXIII. NOVEMBER, 1894. No. 5.

PROVISION FOR EPILEPTICS.

The treatment of this distressing complaint is, to say the least, very unsatisfactory and little headway seems to be made towards any more successful methods. The condition of the epileptic is really pitiful; many of them are persons of considerable ability and able to undertake any employment, but suddenly the terrible malady strikes them down to the terror of those around them and their own mortification, and consequently it becomes more and more difficult for them to obtain employment, until finally they drift into the poor house or become a burden on their friends. The sufferer is debarred from going to church or to any place of amusement, for he never can be sure when the attack will come on. The hospitals look on him as a nuisance, for the ambulances are being perpetually called out to attend to some one who is dying and on arrival finds the patient sitting up and looking about him in a dazed manner, just recovering from an epileptic fit, or perhaps has recovered and gone off about his business.

The proportion of epileptics is variously estimated at from one to two per thousand of the population, so it is far from being an uncommon disease, and what is to be done with this large and helpless class?

In a paper written by William Pryor Leitchworth, LL.D., Commissioner of the New York State Board of Charities, we find it given as the opinion of those who have given their time and attention to this matter, both physicians and charity

workers, that there is only one form of institution which meets the requirements of the case, and that is the colony system. The first of this system was in 1848, when John Bort, pastor of a Protestant church at La Force, near Bordeaux, France, built a house for friendless girls. This was enlarged and added to, and finally another house was built in 1881. In these the patients live as much as possible like families in their own homes. Outdoor life in the country was believed by the good pastor to do as much good as medicine. This was the first practical starting of the idea which has spread more or less over Europe, and has been adopted in some of the States of the Union, Ohio being the first to provide a state institution for epileptics.

Such a colony requires several houses, so that the cases may be classified, and as the number of houses increase this classification becomes more perfect ; each home is complete in itself under the charge of a superintendent or house father. A hospital must be provided and a staff of nurses with proper accommodation. Employment must be furnished in farm work, various trades, &c., so that the colony may be as self-contained and self-supporting as possible. Finally, every opportunity should be provided for the scientific study of the disease.

This system has been found to give the best results of any form of treatment, and to be most conducive to the happiness of these unfortunates.

Canada is no more exempt than other places from this disease, but nothing has yet been done by the government to alleviate their distress. It need not be a very expensive proceeding, with the vast acres of government land lying waste with timber enough upon it to put up the necessary buildings. If some of the sums squandered in useless engineering works, in building bridges where there is no traffic, or waterways where no boat dares to go, could be diverted to this use, not only would the patients themselves be benefited, but also their families, for the care and expense is greater than in many instances can be borne. If, however, the state cannot be prevailed upon to take up this question, it might be made a private charity, as it was

in Europe in its development. Such an enterprise would necessarily be on a small scale, but the expenses would not be great, and if properly managed might be made pretty nearly self supporting.

THE OLD COUNTRY DOCTOR.

For some time we have been making a collection of the opinions expressed in the newspapers regarding doctors, and a most unflattering collection it is. From beginning to end it reminds one of the old rhyme about the devil and his desire to become a saint. However, at last we have come across an extract from the *Christian Herald* that is in such direct opposition to the usual run of such articles, that we hasten to present it to our readers, so that they may not be altogether discouraged by the jokes of our unfeeling and unsympathetic populace. The article in question is headed " The Old Country Doctor," and was probably written by some one during the stage of gratitude which is usually among the sequelæ of a severe illness, and is followed, except in rare cases, by a condition of apathy towards, if not of absolute dislike of, the doctor. Be that as it may, the extract is as follows, and of its justice we leave the reader to judge :

" Our country physicians have so many hardships, so many interruptions, so many annoyances, I am glad they have so many encouragements. All doors open to them. They are welcome to mansion and to cot. Little children shout when they see them come down the road, and the aged, recognizing the step, look up and say, " Doctor, is that you ?' They stand between our families and the grave, fighting back the troops of disorder that come up from their encampment by the cold river. No one hears such thanks as the doctor hears. They are eyes to the blind, they are feet to the lame, their path is strewn with the benedictions of those whom they have befriended. One day there was a dreadful foreboding in our house. All hope was gone. The doctor came four times that day. The children put away their toys and all walked on tip-toe, and at the least sound said ' Hush !' How loudly the clock did

tick, and how the banister creaked though we tried to keep it still! That night the doctor stayed all night. He concentrated all his skill upon the sufferer. At last the restlessness of the sufferer subsided in a calm, sweet slumber, and the doctor looked up and smiled: 'The crisis is passed.' When propped up with pillows, in the easy chair, she sat, and the south wind tried to blow a rose-leaf into the faded cheeks, and the children brought flowers—the one a red clover top, the other a violet from the lawn—to the lap of the convalescent, and Bertha stood on a high chair with a brush smoothing her mother's hair, and we were told in a day or two she might ride out, joy came back to our house.

"And as we helped the old country doctor into his gig, we noticed not that the step was broken, or the horse stiff in the knees, and we all realized for the first time in our life what doctors were worth. Encourage them. They deserve every kindness at our hands."

Public Health.

"WATERBORNE" AND BREAD-NURTURED TYPHOID INFECTION.

Surgeon-Major S. J. Rennie. A M.S., of Meerut, India, sends us the following short account of bread acting as a means of transport of the virus of enteric fever :

An instance having occurred in this station in which it has been almost undoubtedly proved that bread, especially in the form of half-baked, doughy "plum cakes," was the means by which the enteric virus was spread, I venture to put the circumstance on record, in the hope that it may lead to further observation and inquiry on the subject. In April and May of this year, enteric fever was very prevalent here, until, towards the end of the latter month, it assumed almost an epidemic form. From enquiries I was led to make, I found that the majority of those attacked were temperance men, and belonging to the Army Temperance Association. In this country the ordinary bread ration is issued by the Commissariat Department; every care is taken in its preparation, and the bread itself is usually excellent. The Army Temperance rooms and regimental institutions, however, procure their supplies of cakes, etc., from dealers in the native bazaar, who manufacture the articles in their own houses, often taking the water used in the process from very questionable sources. In the case in point, an inspection of the premises of the native baker who supplied the temperance rooms was made, by Brigade-Surgeon-Lieutenant-Colonel Boileau, Surgeon-Captain Tait, and myself, and as a result of what we then discovered, arrangements were at once made for a supply of cakes and other luxuries of a like nature prepared under European supervision. This was in the end of May, during which month there had been no fewer than seventeen admissions to hospital for enteric fever. The effect was marked and immediate, for the disease at once declined. There were only

three more admissions in the beginning of June, and not another single case during the whole of the remainder of June and July. These results, I think, speak for themselves, and I hasten to lay them before medical officers serving in stations where this terrible scourge of the young British soldier in India may be prevalent, with the suggestion as to the advisability of inquiring into the sanitary condition of the sources of the bread, etc., supplied to the regimental institutions of the troops under their charge, in cases where there is no obvious cause for the spread of the disease discoverable. I may add that a precisely similar state of things was found to exist at Cherat, where I was quartered last year, and where enteric fever prevailed in an epidemic form. I then also noticed that the majority of those attacked were temperance men, and an inspection of the bazaar bread shops revealed such a state of things that the vendors were brought before the civil authorities and severely punished. It was, however, too late in the season for any marked results to be observed, as the troops returned to the plains the following week ; but I felt quite convinced at the time that we had hit off the true cause of the spread of the disease, and my conviction has been abundantly verified in the present instance.

The source of the infection I believe to have been the impure water of the wells, which are usually situated within the house itself, or in the small enclosed courtyard common to almost all native residencies. On the margin of these wells, with true Oriental disregard of even the first principles of sanitation, all the personal ablutions, clothes washing and general " cleaning up" of the whole family is performed. This is the water that is then drawn and used in the preparation of cakes by the native bakers. These cakes are placed in the oven, and exposed merely to a low heat, which may possibly kill the bacilli, but is quite insufficient to do for the spores, the result being a mass of that indigestible " stodge" which delights " Tommy Atkins" and the British schoolboy. The softer—more underbaked—and doughy it is the more it is appreciated, a fact well known to the mild Hindu " roti-wallah."

While writing on the subject I may mention what I consider

to be another very important and patent factor in the spread of disease in India—namely, the filthy habit of the native washermen of washing clothes in any little stagnant waterhole they may come across ; these holes so used are often on the outskirts of a village, and are simply common cesspools. Infusions of the linen washed in these places yield bacilli by the score. In the hot weather, when the clothes are thoroughly dried, they may be rendered more or less innocuous; but far different is it in the rains, when the things are almost invariably brought back in a damp or semi-damp condition, and this, be it remarked, is the season when cholera is usually most prevalent. Much has been done in some stations to ensure a supply of clean running water for this purpose, but I firmly believe that all danger from this source will not be removed until every station in the country has its properly constructed " dhobies"—washing troughs—with a free inlet for the fresh, and a free outlet for the soiled, water.

Dr. Klein, to whom we have submitted the above statement, favours us with a note to the effect that " The typhoid bacillus does not form spores, but if, as above stated, the materials are ' exposed merely to a low heat ' it is quite possible that some of the bacilli in the centre of the cakes remain shielded from the heat; experiment shows that a temperature of at least 65°C. acting for some time is required to kill the bacillus."—*British Medical Journal.*

Medical Items.

THE JAG-CURE ACT.—In Michigan there was a statute passed by the Legislature allowing a magistrate to accept from a person convicted of being "drunk and disorderly" a recognizance that he would place himself under the care of some company administering a cure for the liquor habit. This is instead of the usual recognizance for good behaviour. This statute is known as the "Jag-Cure Act," but it has been declared unconstitutional by the Supreme Court.

The medical profession of Texas is not a unit, if we may be allowed to form a conclusion from the perusal of the pages of the *Texas Health Journal* In the issue for July Dr. Cunningham has an article with the vigorous title "The Amazing Infatuation of the Texas State Medical Association in Pompously Parading Its Appalling Ignorance of the First Principles of Sanitary Legislation, and Its Unbounded Cheek and Unmitigated Gall in Presuming to Instruct Congress in the Proper Performance of Its Duties, Succinctly Set Forth."—*Medical Record.*

A CASE OF HYPERPYREXIA.—M. Ch. Richet reported to the *Societé de Biologie* a unique case of hyperpyrexia, which M. Caparelli (of Catana) had communicated to him. A young woman in the neighbourhood of Catana for several days had an evening temperature of 45° C. (113° F.). The attending physicians, surprised at such an elevation of temperature, called Prof. Caparelli in consultation, and he observed an axillary temperature of 46° C. (115° F.), verifying the observation by using several thermometers. The cause of the hyperthermia was malarial poisoning, and under the influence of quinine the temperature became normal.

M. Richet recalled the case where a Cincinnati physician

reported a rectal temperature of 46.1° C. after insolation. It is most remarkable that the two patients who have presented these excessively high temperatures, the highest on record among mammifers, have recovered.

—It has been stated that you may know the character of a place by its newspapers. The test may not be always true in its results; but the English press seldom fails as a faithful reflex of the times in which we live. It represents public opinion, and it indicates by its advertisements and its news the sort of people among whom it circulates and to whose wants it ministers. Look, say, at No. 795 of the *Leeds Intelligencer*, published by Griffiths Wright, at New Street End. This issue, a sheet of 16 small columns, appeared on *September 13, 1768*, and Mr. Rhodes draws our attention to the copy before us. This publication of a century ago gives a pretty clear idea of some peculiarities at least of the people who then did their part in "making" Leeds, if not what it is now, at all events as fairly great as the times and circumstance would permit. Here is a grave announcement recalling to mind the days when a very fatal and destructive disease prevailed extensively in the country:

"INOCULATION—Mr. SUTTON begs leave to inform the Public that he has taken into partnership Mr. HORSMAN, Apothecary and Surgeon, of HAREWOOD, who has there fitted up an elegant House for the Reception of Patients to be inoculated for the small-pox. *** Seventeen children in the Township of Harewood have been already inoculated and safely conducted through that Distemper, to the great Joy and Satisfaction of their Parents."

The benefits expected from inoculation were far from realized in the country generally, but there was, it seems from this significant announcement, great joy at Harewood Small-pox was in its destructive power checked 30 years later on by Dr. Jenner's famous discovery of vaccination, and, whatever the opponents of vaccination in the present day may say, there is abundant cause for joy that, instead of every other person you meet in the street being dis-

figured by the effects of the malady referred to, there is scarcely any evidence at all of the disease.—*Yorkshire Post.*

"HAIL, HORRORS!"—Macbeth "supped full with horrors.' But could he return and live in modern times, he might have even a richer banquet than his first; for a Frenchman, M. Gelineau, has just published a volume upon "Unhealthy Fears, or Phobiæ." These curious and uncomfortable states of mind were first described by Benedict and Westphall; but there are many species, and M. Gelineau has carefully compiled a complete list for the benefit of his shuddering yet fear-bound reader.

They are aichmophobia, or fear of sharp points, as of needles or pins; agoraphobia, or fear of open spaces, with a sub-variety, thalassophobia, or dread of the ocean; astrophobia, or fear of the stars and celestial space; claustrophobia, or fear of enclosed spaces; mysophobia, or fear of filth; hæmatophobia, dread of blood; necrophobia, or horror of dead bodies; thanatophobia, or dread of death; anthropophobia, or fear of crowds; monophobia, a fear of being left in solitude; bacillophobia, or fear of microbes; siderodromophobia, or dread of railways; pathophobia, or fear of disease, with many subdivisions, of which the most important and most frequent are anginophobia (fear of angino pectoris), ataxophobia, syphilophobia, lyssophobia (or fear of rabies), spermatophobia and zoophobia (or fear of animals), which in his turn has subdivisions for cats, dogs. horses, mice etc., *ad totum catalogum animalium.*

Returning to the list, we find still kleptophobia, fear of becoming a kleptomaniac; pyrophobia, fear of matches; stasophobia, dread of standing upright; aerophobia, or dread of draughts of air; acrophobia, fear of high places; toxicophobia, a fear of poisons; demonophobia, a dread of the devil (this is rather rare).

There are also a very great number of phobiæ peculiar to certain professional persons, as physicians, artists, merchants, which have yet to be Hellenized and classified:

The culminating fear, however, the quintessence of dread, is the fear of having a fear, the dread of a dread, or phobophobia.—*Boston Medical and Surgical Journal.*

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The volume commences with the July number, but subscriptions may begin at any time.

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THE MONTREAL MEDICAL JOURNAL CO.,
Care of GAZETTE PRINTING CO.,
MONTREAL

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MONTREAL MEDICAL JOURNAL.

VOL. XXIII. DECEMBER, 1894. No. 6.

Original Communications.

CASE OF PRIMARY CARCINOMA OF LIVER.*

By J. G. ADAMI, M.A., M.D.

Professor of Pathology, McGill University, Montreal, and Pathologist to the Royal Victoria Hospital.

During the last session of the Society I brought before the Montreal Medico-Chirurgical Society a case of true adenoma affecting the liver of a woodchuck, and arising primarily, as its structure amply demonstrated, from the parenchyma of that organ.†

I have now to describe you a case of very similar nature in the human liver, only here the adenoma has taken on a malignant character and secondary growths have developed elsewhere.

The specimen was obtained at a post-mortem made at the Royal Victoria Hospital on September 4th. The subject from whom it was obtained, J. B., aged 45, entered the hospital under Dr. Stewart, complaining of weakness and loss of flesh, with pain and swelling in the abdomen. He had been addicted to good living and excessive use of alcohol and there was a doubtful specific history. About a year before admission there had been a violent attack of jaundice, from which patient gradually recovered.

The liver dulness extended from the fifth rib to two

* Read in abstract before the Montreal Medico-Chirurgical Society, Nov. 2nd, 1894.

† *Vide* this Journal, Vol. xxiii., p. 55. July, 1894.

inches below the costal margin, the edge was sharp, while the anterior surface presented a nodular mass the size of the fist, movable with the liver.

This lump in the right side, noted now to be in connection with the liver, was first observed five months ago.

Without dwelling fully upon the condition of the other organs it may be added that there was much ascites. The patient was tapped twice and each time a blood-stained ascitic fluid was removed containing both red and white corpuscles and urea; it was highly albuminous.

With this history a diagnosis was made of cancer of the liver. The autopsy fully confirmed this diagnosis.

In connection with the liver within the substance of the right lobe was the large pale-coloured mass seen in the specimen handed round. Upon the surface were several semi-transparent nodules of new growth in the capsule, but upon section the only recognizable focus of new growth within the organ was the one large well-defined mass. This mass was 10.5 cm. broad and 14 cm. long sharply separated off from the surrounding liver tissue; it was placed anteriorly at the left extremity of the right lobe and to the left of the gall bladder. This last was greatly thickened and pressed to the right by the growth. Upon opening it was found to be full of thick brownish-grey pultaceous mass of mixed pus and bile, with such intense staining power that even now upon November 2nd the nail of my left index finger is stained from exploring the gall bladder of this case upon September 4th. In this mass lay several soft small facetted gall stones, which easily crumbled and broke down when handled. Two larger and firmer stones lay at the opening of the cystic duct and appeared to completely block it.

The great omentum was greatly thickened and of a deep blood-stained tint, very nodular and brittle. The small intestines presented numerous semi-transparent nodular growths upon their serous surfaces. There were further numerous small nodules scattered through the mesentery

and imbedded in the fat. There was no sign of new growth anywhere within the intestinal tract.

Beyond œdema of the lungs and interstitial nephritis, there was little calling for additional remark.

Upon microscopic examination the new growths here described were typically carcinomatous, of the medullary type. The great size of the mass in the liver, as compared with the minute nature of the nodules elsewhere, appeared to indicate that in the liver was the primary growth, and microscopic examination proved the correctness of this suggestion. More especially towards the growing free surface the mass could be seen to be composed of characteristic liver cells, large, tending to be cubical and pigmented, possessing a tendency to be arranged in an alveolar manner. Elsewhere, deeper down in the tissue, the cells became smaller and the collections were separated off from each other by well formed fibrous stroma. In parts there was a tendency for the cells to be arranged around a central lumen.

The sections, in fact, possessed all the characteristics of an adenoma, or new growths of the liver tissue which had taken on malignant characters. This malignancy was further demonstrated by the abundant new growths in the abdominal cavity.

Primary carcinoma in the liver may be of three types:

1. Generalized carcinoma, the cirrhosis carcinomatose, of Peres.

2. Localized carcinoma orginating from the liver cells proper.

3. Localized carcinoma originating from the smaller bile ducts.

A fourth form, not truly hepatic, invades the liver after primary origin in the larger bile ducts.

Here in this case we are dealing with the second form, that is to say, with a true liver cell cancer, which is of sufficient rarity to be placed on record.

Finally, it is interesting to observe the relationship that in this case appears to exist between the inflammatory dis-

turbance of the gall bladder, which dated back a year, and the cancer which has arisen in close juxtaposition to the inflamed bladder. The suggestion is that some relation exists between the two. It is noticeable that the gall bladder itself exhibits no cancerous growth; it is only chronically inflamed, but immediately outside it, in the region that is of congestion and over nutrition of the tissue has originated this new growth.

THE VALUE OF LOCAL TREATMENT IN SEPTIC INFECTION OF THE PUERPERAL WOMAN.

By DAVID JAMES EVANS, M.D.

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This contribution is presented this evening in the hope that it will call forth a free discussion, and not because the writer has anything new upon the subject to bring to your notice, or a new way of presenting an old subject.

Elevation of temperature in the puerperal woman is not always due to septic infection, nor is the uterine douche invariably indicated in every case of sepsis. The cause of the elevation in this class of cases must be carefully searched for and, if possible, a clear diagnosis made before a definite course of treatment can be decided upon.

Many practitioners have but the haziest ideas as to the subjective and objective symptoms of septic infection in the puerperal woman, and these are scarcely less nebulous than their ideas of its treatment. In hardly any condition is an exact diagnosis more urgently called for, nor is the benefit of prompt and energetic treatment more brilliant than in so-called puerperal septicæmia. Delay and hesitancy, or the adoption of inadequate treatment, prove disastrous not infrequently, not only to the life of the patient, but also to the reputation of the physician.

One often hears the assertion made that out of such a number of cases of midwifery attended, there has not been a single case of septic infection. Perhaps there has not been a fatal case, but let any one examine the case books of any gynæcological clinic and he will note the number of patients who date the beginning of their sufferings to a certain confinement. I am sure the gynæcologists will bear me out in the statement that fully 50 per cent. of their cases are the result of careless midwifery. Gentlemen, if midwifery were practised as it should be, cases of

* Read before the Montreal Clinical Society, Nov. 10th, 1894.

mild septic infection promptly diagnosed when met with, and their treatment immediately undertaken, many a woman who is suffering to-day, would be well, and many a home brighter and happier. The advent of the baby would cease to be an event which is followed by more or less invalidism on the part of the mother, trouble and worry on the part of the father, and an increased income to the neighbouring gynæcologist.

Puerperal fever, as such, no longer exists, but has been relegated to the past along with milk and surgical fevers. Septic infection is the same whether it follows the work of the surgeon, gynæcologist or the obstetrician. Its forms vary with the site of the infection, the virulence of the infective agent, and the resistance of the organism attacked.

The French, German and English schools have all a more or less complete classification of septic infection in puerperal women. Some are too full, others scarcely complete enough. I venture to present to you this evening a table or classification which is the product of my reading and experience, and which can readily be carried in the mind.

The infection may be:

(1.) LOCAL.

(a) *Puerperal Ulcers.*

Greyish pseudo-membranous patches found wherever m.m. is torn. Lochia offensive. Smarting pain. Fever.

(b) *Endometritis*—Two forms,

I. Catarrhal.	*II. Pseudo-membranous.*
Vaginal m.m. red, swollen. Cervix œdematous. Os patulous. Slimy brownish lochia. Uterine m.m. covered with small cystic swelling. Fetid lochia remaining sanguinolent. Uterus well contracted. No tenderness. Abdomen flaccid.	All vaginal and cervical lacerations covered with greyish membrane, extending to endometrium. Lochia may be normal or fetid. Not much tenderness in uterus which is enlarged. Chills and fever not marked.

c *Metritis.*

Extension along connective tissue.

d) *Peri or Para-metritis, Cellulitis.*

Extension along peri uterine connective tissue.

(2.) GENERAL.

(a) *Peritonitis.*
Extension along lymphatics.

(b) *Pyæmia.*
Extension along blood vessels.

(c) *Septicæmia.*
No local signs, general infection by micro-organism.

(d) *Bacillus Coli Communis* (?)

If *local* it may be in the form of

(a) *Puerperal Ulcers.*—These form on any part of the vagina or labia which has been denuded of epithelium, are irregular in outline and shallow, the surface being covered with a greyish diphtheritic looking exudation or membrane. Their edges are red and elevated, and the surrounding tissue often œdematous. They are usually found at the vaginal orifice and extending up the labia minora or over the perineum. The symptoms they cause are smarting, burning pain at their site, fetid lochia, or a fever, more or less marked. They are often associated with the presence of gonorrhœa.

(b) *Endometritis* is the result of infection of the lining of the uterus, and occurs in *two forms*, the simpler being the *catarrhal* form. Locally on making an examination of such a case, one would note the vagina red and swollen. The cervix œdematous, its mucous membrane, as well as the endometrium, being covered with a thick brownish slime ; the endometrium, when uncovered, appearing as a mass of closely agglutinated rounded swellings, which, when ruptured, exude a purulent fluid. The uterus is generally well contracted and is not tender on pressure. The symptoms are, offensive lochia, often very marked. The lochia remains blood tinged longer than usual. Fever is remittent in type, and there may be a chill at the outset. This may be repeated at intervals, but not as a distinct chill, it taking the form of a sensation of goose flesh, and occurring at irregular intervals. After-pains are prolonged several days in these cases.

The subjective symptoms are slight, the patients com-

plaining of nothing, and often resenting interference in the early stage. The pulse is always rapid in all forms of septic infection and an increase in its rate may often precede the elevation of temperature. In this catarrhal form small bits of retained chorion are often found trailing through the os into the vagina.

The second form of Endometritis is usually found associated with puerperal ulcers, and is the result of the extention of the infection to the endometrium. It is known as the *Pseudo-membranous form.* On inspection any laceration of the vagina or cervix will be found covered with a membrane, as before described. The cervix will be œdematous, and through the os a purulent looking fluid exudes, which may or may not be malodorous. The fetid odor is not so marked as in the other form, on the whole I think.

The lochia may apparently be normal in quantity and quality, or may be scant or absent. Uterus will be found large and soft, and is more tender on pressure than in the other form. Subjective symptoms are about the same, but the chill and fever may be more marked.

Gonorrhœa predisposes to these forms of endometritis. In all cases where gonorrhœa is suspected at or before delivery, the urethra should be emptied by pressure from within outwards, and the resulting drop of mucous examined for the gonococcus. In either of the above forms of endometritis, the local symptoms may be so slight as to escape observation, and yet sub-involution, hydro- or pyosalpingitis are the sequalæ to be dreaded. It not infrequently happens that the fact that endometritis of either of the above forms was present during the puerperal period, is left for the gynæcologist to demonstrate, when after a brilliant cœliotomy, performed some months later, he presents the pus distended tubes before some medical society.

The course of both of these forms depends on the resistance offered by the patient, and the virulence of the infective germs. After a transient elevation of temperature she may

recover. Her puerperium may be somewhat slower than usual ; her after history one of pelvic pain, menorrhagia and sterility.

Or the infection may become general ; from which recovery may take place, but which generally results fatally. General infection usually takes place through the lymphatics.

Another form of local infection results in *Metritis*. The extention of the inflammation takes place in this form through the connective tissue of the uterus, and is usually the result of the infection of a lacerated cervix. Uterus will be found to be enlarged and tender, and the cervix torn, gaping, bleeding when touched, and œdematous. The endometrium may appear normal. Pain is complained of. Fever is marked but varies. Lochia remains sanguinolent and is pretty free, though I have seen it suppressed altogether in this form.

The last form of local infection on this table is *Para or Peri-Metritis or Celullitis*. This form is also the result of the spread of the infection along the connective tissue, but instead of passing up into the uterus it passes into the surrounding connective tissue, resulting in extensive peri-uterine exudation. On making a local examination, these stone like masses will be felt, and the uterus found firmly fixed to the pelvic wall.

Pain and tenderness is very marked. Fever may be high at first, but usually runs about 102°. The condition lasts from three to six weeks, and results in an abscess or in resolution of the exudate.

Now *General Infection* may be divided into three clinical forms, the first on the chart being the *Peritonitic form*. In this form the endometrium may appear healthy or may be but slightly affected. Extension to the peritoneum takes place through the lymphatics. It is a lymphangitis resulting in a peritonitis. The onset is rapid and the subjective and objective symptoms marked. I have seen but two cases of this variety, one died on the fifth day and the other recovered after a hard fight.

The next form of general infection noted is the *Pyœmic*, the result of extension along the blood vessels. This form is marked by the occurrence of marked rigors, sweating and fever. Both subjective and objective symptoms are marked as a rule.

I feel inclined to place phlegmasia alba dolens under this head, as its mildest and most attenuated form.

The last and most terrible form is the *Septicœmic* form. In this the local symptoms may be entirely absent. There is an acute intoxication of the whole organism, and the post-mortem may reveal no sign of the formation of pus, but cultures of either the streptococcus or staphylococcus, or both, may be obtained from the blood and tissues.

Bacteriologically considered, the most common infective agent is the streptococcus, then we have the mixed infection and most rarely the pure staphylococcus infection. Lately the bacilli coli communis has been noted as a cause of elevation of temperature during the puerperal period, and the theory of anto-infection from the intestinal canal is attracting considerable attention at present.

Septic infection by means of the mammæ should be borne in mind, and I have separated three forms in my mind, according to their clinical symptoms.

(1.) Extension of the germs along the membrane of the galactophorous ducts leads to the condition of galactophoritis. Slight symptoms manifested, but child suffers continuous loss of weight.

(2.) Extension by lymphatics either *superficial*, in which case the course of the inflamed glands can be seen passing over the breast in the direction of the axilla, or *deep*, in which case the deeper glands are affected and undergo inflammation and may either resolve, form an abscess, or pass into the next form, viz. :

(B.) Extension by the connective tissue resulting in parenchymatous inflammation, or true mastitis. The infective germs are the same as in infection through the genital tract.

This digression to the infection of the mammæ will, I trust, be pardoned, and we will return once more to the subject in hand.

In order to have a clear idea of the indications for treatment, a glance at the condition of the uterus and vagina, both before and after infection, will repay us.

In the normal condition there is an enlarged and congested uterus and vagina. The muscular layers are undergoing rapid fatty degeneration and absorption, the lymphatics are, so to speak, being worked at full pressure. The endometrium, with its shreds of charonic decidua, is being rapidly disintegrated and cast-off. Perhaps a blood clot occupies the cavity of the uterus, which has formed after the expulsion of the placenta. A small shred of retained membranes may pass through the os from uterus to the vagina. Perhaps a small portion of the placenta has been left behind. Here we have a perfect nidus for the development of putrefactive and infective organisms should they gain an entrance. This clot or piece of membranes may be expelled at the first action of the bowels or during micturition on the second or third day, and beyond a slight odor to the lochia for a few hours, nothing is noted.

Should infection of the endometrium take place, either along this piece of membrane or from the entrance of air to the uterus or by direct extention from infected lacerations of the vagina, the pathologists tell us that we would find a necrotic, brownish layer on the internal surface of the uterus, thick with putrefactive or infective microorganisms ; below this a layer of round celled infiltration, leucocytes. This latter is nature's protective skirmishing line, dividing the infected areas from the healthy subjacent tissues.

In cases going on to general infection, the uterine sinuses and veins are plugged with leucocytes infected with these organisms. The cause of the general symptoms in cases of local infection only, is the absorption of ptomains in all probability, while in pyæmia, septicæmia, either infected

emboli or the organisms themselves are dispersed by the circulation.

Fever during the puerperium, as has been said before, is not of necessity of septic origin. It is not our purpose to discuss the various causes of rise of temperature in the puerperium which may simulate septic infection. Suffice it to call attention to the necessity of a careful examination of the patient and her environment, mental and physical, before venturing to make a diagnosis of septic infection.

Before such a diagnosis can be made, a careful examination of the genital tract must be undertaken. In order to make such an examination satisfactorily, the patient must either be placed on a table or her hips brought to the edge of the bed. The dorsal decubitus is most convenient, as the Sims position would favour the ingress of air and the return of infected lochia to the cavity of the uterus. The physician having sterilized his hands and all instruments he is likely to require, then inspects the vulva. The condition of the genitals, the odour, colour, quantity of any discharge present must be noted before cleansing the parts previous to making an internal examination. Then separating the vulva, any lacerations about the perineum or orifice of the vagina must be examined. If wounds sutured after labour are found to be infected, the stitches must be removed and the surface of the wound washed clean. The necessity of having any infected area about the external genitals or lower vaginal mucous membrane washed clean, at once is apparent when one realizes that the uterus may not be infected, and if one should pass in a speculum or introduce a uterine nozzle over such areas, it is more than likely that more harm would result than good from such local treatment.

Before exposing the cervix one should be prepared to carry out immediately whatever local treatment may be deemed necessary, and to do this one must have a clear idea of the indications for treatment.

Briefly one has to deal with a cavity, the lining mem-

brane of which may be more or less necrotic and infected with pathogenic organisms. The indications are first to clean the infected areas as thoroughly as possible, to bathe the surface left with some antiseptic which will either destroy or lessen the virulence of any micro-organisms remaining or finding their way into the cavity later, and to support the strength of the patient by easily digested food, stimulants, tonics, etc. At the same time the emunctories must be kept active, the action of the bowels, kidneys and skin being promoted.

Uterine injections of antiseptic solutions are no doubt of great value, but such injections may prove as potent of harm as of good. The antiseptic used should fill the following requirements: It should be cheap, of high microbicide power, potent in small doses, non-irritating, either to the patient's tissues or the physician's hands, its odour should not be disagreeable, nor should its retention or absorption by the patient lead to any toxic effects.

Time does not permit the discussion of the various antiseptics that may be employed, but I would take the opportunity to utter a word of caution in regard to the use of bichloride solutions, especially in the case of blends. I have seen two instances where I feel certain the toxic effect of the drug was obtained. Creoline in my hands has proved of service; from ½ to 2 per cent. solution may be employed. Permanganate of potash and iodine water are also valuable. The French use carbolic acid solution, and many Germans prefer lysol.

The uterine nozzle may be of glass or vulcanite, but should have a large curve and blunt tip. A Bozeman's catheter of large size is very convenient. To expose the cervix I prefer an ordinary large sized Sims speculum.

The curette used should be blunt and have the scraping surface at an angle with the shaft, which should be long. A pair of uterine forceps, two uterine brushes and a vulcellum forceps completes the equipment.

Two wire applicators for holding cotton swabs are of

service. Iodized phenol or zinc chloride solution 50 per cent. and iodoform bougies should be at hand.

Having carefully cleansed the perineum and lower part of the vagina, the speculum may now be introduced, so as to catch the cervix and expose it. If the latter appears healthy and the discharge from the os normal the speculum may be withdrawn, a vaginal douche given and any infected surfaces which have been cleaned may now be touched up with iodized phenol or zinc chloride solution, and the parts dusted with boro-iodoform and a pad applied.

Having first cleaned off the lower parts there is no fear of infection having been carried up by the nozzle or speculum.

Should the cervix be found infected and the endometrium abnormal, then the curette must be carefully used, followed by the brush. A good hot antiseptic douche is now in order, after which a pencil of iodoform should be introduced high up into the uterus and left there. In order to curette and douche the cavity of the uterus properly the anterior lip of the cervix must be seized with a tenaculum and drawn down, thus straightening out the uterus. Any lacerations about the cervix should be touched with iodized phenol before withdrawing the speculum. This operation can nearly always be performed without an anæsthetic, for it does not as a rule give rise to very great pain.

A great deal has been written against the use of both curette and brush in puerperal cases, but if one considers the state of the endometrium, it is apparent that a stream of water is quite inadequate to thoroughly remove the infected surface. The curette must be used with great care, as the uterine tissue in badly infected cases may be quite soft in areas. The brush I find of value as it entangles in its meshes any bits of tissue which may have been only partially loosened by the curette and are still too firmly attached to be removed by the succeeding douche.

The uterine douche may be repeated in 12 hours, and

another iodoform pencil inserted into the cavity. In some cases a second curetting in from 24 to 48 hours is required. Should there be any evidence of infection of the tubes, pain in one or both groins, etc., the ice-bag must be kept applied to the hypogastrium.

After this treatment patients may complain of cramp-like pains due to uterine contractions. In certain cases any uterine interference is succeeded by a chill, and in these cases care must be taken to disturb the patient as little as possible. It is wise to administer a stimulant before each douche also in these cases.

In metritis the curette is not of much importance, but the condition of the endometrium is the indication for its use. In this form, two or three prolonged hot antiseptic douches daily, and the scraping and cauterizing of the cervical laceration, constitute the local treatment. The same holds good for the treatment of para-metritis or cellulitis.

In Paris I have seen the constant irrigation of the uterus carried out with success. Here a constant flow of a 1 per cent. solution of carbolic acid is kept up for days until the temperature drops, or until the urine is black. Then instead of carbolic, a boracic solution is employed. The treatment is valuable but entails great trouble to carry out properly.

Now, gentlemen, I do not for one moment claim that if the course of local treatment here outlined be carried out, that fatal cases of septicæma will not occur, or that pus tubes and sub-involution will become things of the past. I venture, however, to think that the physician with a clear idea of the condition present in the case before him, and a sound view of the treatment to be adopted, is in a better position to render assistance and perhaps save a patient's life, or save her from chronic invalidism, than he whose ideas of septic infection and its treatment are crude and uncertain.

The table of classification may not be perfect, but it forms a good working basis on which to outline a diagnosis.

Of course the types may be mixed, or may pass rapidly from one to the other, but with these types clear in the mind, one will probably soon grasp the conditions present in the case before him.

To sum up :—Elevation of temperature during the puerperium is not always an indication of septic infection.

Considerable care must be taken to thoroughly investigate the environment, mental and physical, of each case before venturing on a diagnosis.

An acquaintance with the different forms which septic infection may take in the peuperal woman is necessary for all physicians attending midwifery cases.

Prompt and energetic treatment by means of the curette, brush and douche is of great value.

AN EPIDEMIC OF "PARALYSIS IN CHILDREN."*

One Hundred and Twenty Cases.

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Abstract.

During the past two months, through the intervention of Dr. C. S. Caverley, President of the Board of Health, and his colleague, Dr. H. H. Swift, I was able to make some observations upon an epidemic of "paralysis in children," which occurred in the State of Vermont. The epidemic commenced late in June, increased in July and culminated in August, and though new cases are cropping up, the malady has now almost abated. I obtained the notes of ninety-one cases out of one hundred and twenty which were affected.

At first the belief was held that the outbreak was one of cerebro-spinal meningitis, and there were several cases presenting the characteristics of this disease. But on examination it appeared that such cases were very few, and in many there were no symptoms at all beyond paralysis. There was a general absence of retraction of the head and flexing of the trunk. The sensory symptoms were not prominent, the headache was chiefly frontal and beyond some slight delirium of the ordinary febrile type there were no psychical manifestations. The cutaneous symptoms were absent or unimportant, and while in many cases there were indefinite rashes, in only one were there petechiae, in none herpes-labialis mottling, purple spots or the other undoubted cutaneous manifestations of "spotted fever."

The sequalæ and complications were also different. There was no account of pleurisy or pericarditis, and in only one case pneumonia. Neither the auditory nor any of the

* Read before the Montreal Medico-Chirurgical Society, October 19, 1894.

cranial nerves were permanently affected. The eye symptoms were wholly of central origin, no ophthalmia, no conjunctivitis, no keratitis, no permanent impairment of vision. From an examination of the records of all the epidemics of cerebro-spinal meningitis, and an estimate of such authorities as Randolph, Wilson, Niemeyer, Knapp and Kreitmair, it would appear that the eye symptoms alone were sufficient to differentiate the present malady from cerebro-spinal meningitis. Indeed Hirsch affirms that "Conjunctivitis is almost always a constant condition."

I will set down brief notes of a few cases typical of groups into which the series seemed to fall.

S. C., a boy five years old, complained 17th June of headache, chiefly frontal, with nausea and vomiting, a temperature of 102 degrees and a pulse of 115. This continued for twenty-two hours and was succeeded by soreness in the arms and legs, loss of reflexes, with generally increasing paralysis, culminating after twenty-four hours in a completely powerless condition of both lower and both upper extremities which still persists.

A. B., a delicate girl of twelve years, with a slight left lateral spinal curvature, fell sick of an attack resembling indigestion, with coated tongue and marked constipation. Gradually, without alarming symptoms, paralysis supervened, and in two days both arms and legs were useless. After five weeks there is no sign of improvement.

In this case there was a real arthritis quite as intense as in an ordinary attack of acute rheumatism, the pain not merely "supposed to be in the joints." (Gowers.)

Boy, seven years old. 4th July had a temperature of 103 degrees, and a pulse of 120 for three weeks. The temperature suddenly dropped to 97, and the pulse to 50. The knee joints now became painful and swollen, as well as the elbow and shoulder, paralysis of the left upper and left lower extremities followed and still persists.

In this case the preliminary symptom was double vision. A girl, eleven years old, suddenly developed this condition

and for three days was slightly unwell. Next morning she was unable to get out of bed on account of complete paralysis of the left arm and leg. Fever with delirium followed for four days when the symptoms abated, and now the limbs show some improvement. In this case the menstrual function was established during the progress of the disease.

In other instances there were no premonitory symptoms and without warning, the children would "stumble," and on examination one or other of the limbs would be discovered in a paralytic condition.

The following may be taken as types of the fatal cases:

S. G., an Italian boy of four years old, on the 21st July became sleepy and complained of headache. He was found to have no fever, but with a pulse of 45 slow, hobbling in character and intermitting every fifth beat. This continued for four days, when a slight improvement was noticed, internal strabismus occurred, but the child made a complete recovery, so far as symptoms were concerned, on the the seventh day. He was then allowed to divert himself in the hot sun in company with a goat, when all the original symptoms returned, headache, squint, halting pulse and drowsiness. This was the last of August, by the first of September he was worse than at any previous time, but yet had no fever. Next day the knee-jerk was absent, but the plantar reflex was retained, as well as the cremasteric. The legs now became paralysed, and by the third of September the paralysis was general, the eyes half closed, the pupils dilated and unequal, a temperature of 105 degrees The child died at three o'clock the same afternoon.

Hilding A., a Swedish child, twenty months old, on the 31st August was stricken with fever of 103 degrees and pulse of 120. The restlessness was extreme, the child moaning and tossing its limbs, but quite conscious. The head was slightly retracted, and the pupils contracted unevenly. Next day the general symptoms were improved, but the child continued restless and in a highly excitable

condition. The second of September the fever had disappeared, but the restlessness increased with clonic spasm, strong grinding of the teeth and paralysis of the left leg. Next day the temperature rose to 104, the spasm increased and general paralysis supervened. The child died in the afternoon.

In view of the fact that in many cases of cerebro-spinal meningitis the lance shaped coccus, similar in all respects to the pneumococcus, has been found, which Corneil and Babes regard as the cause of both diseases, it is worth remarking that pneumonia was present in only one case.

E. F., a boy aged four years, was affected on the 8th of August, after a slight preliminary illness, with paralysis of both legs, and two days later developed pneumonia. Both conditions subsided and now the child is in a fair way of recovery.

In a few the onset was accompanied by symptoms of transient meningitis. Gowers believes that such condition must be regarded as a coincident effect of a common cause.

I have also notes of six cases in adults, of which three were fatal, in two the paralysis persists, the other, a man of seventy, recovered.

The ages were nineteen, twenty-four, twenty-seven, thirty-five, thirty-six and seventy years.

For example : S. J., a lad 19 years old, complained of pain the head and back, a pulse of a 100 and a temperature of 102 degrees. The fever subsided on the fourth day, the pulse fell to 56 and all pain disappeared. The right arm now became paralysed, and by next morning the pulse was at 38, the temperature 97, the extremities cold. Complete paralysis developed during the day, and in the afternoon the young man died.

The muscles in every marked case showed the degenerative reaction in a characteristic manner. The loss of faradic irritability was observed, and in many cases absolute, while the reaction to the constant current was increased. The muscles were variously affected. In some

cases the whole arm was paralysed, in some only the intrinsic muscles of the palm, but the combinations of the different groups affected were endless. After an exhaustive tabulation of the muscles and groups affected, I was unable to discover any combinations which seemed to preserve any definite order. In the legs the extensor group was injured most frequently, and sometimes there was a functional association. The paralysis in every case was motor, and the only disturbance of sensation was hpyeræsthesia.

The distribution of the paralysis was as follows, reduced to percentage :

Left arm alone	2.
Right arm alone	4.
Both arms alone	2.
Right leg alone	7.
Left leg alone	26.
Both legs alone	45.
Left leg and left arm	8.
Right leg and right arm	3.
Both legs and left arm	2.
Both legs and both arms	4.
Right thigh	2.

The infection was confined to a definite area fifteen miles long and twelve in breadth, with the range of the Green Mountains on the east, but no natural boundary on the other side. The city of Rutland is in the centre of the area It would be hard to discover a region in which a disorder had less license to become epidemic; the whole district lies upon a series of terraces, and increased safety did not come with elevation. Indeed, four cases occurred on the very ridge of the Green Mountains, at an elevation of 1,500 feet, and the line of the four dwellings extended over half a mile. The water supply was different in each of the four cases, namely from springs out of the mountains. The range referred to definitely limited the infected area, which occurred in a region with faults and dislocations in the earth's crust and profound breaks in the whole strata, while on the other side of the mountains the country is level and unfaulted. Neither overcrowding of habitations nor any of the evils usually accompanying or flowing from this

condition were factors in the present case, since only in four families was more thon one member affected. It was quite usual for children to sleep with those who were affected and themselves remain entirely free from the disease. No isolation was practised, nor did such precaution appear to be of the slightest value. Indeed the brunt of the disease fell upon the purely rural portion of the community. There was nothing discoverable in the domestic and personal hygiene of those attacked. The houses were all detached, and in most cases there was nothing in the nature of privy or cess pool. Nor had penury any part in the epidemic. The district is one of the most thriving in the United States and has been settled for a century and a half. The food, water and milk supply were examined and were found above reproach. The food and milk is drawn from the neighbouring farms or from the farms in which the patient's lived. The veterinary surgeons have remarked no unusual occurrence amongst the cattle, but twelve horses died of what was called cerebro-spinal meningitis. I was unable to procure any reliable account of these cases. The summer was dry and hot, the springs scanty and the surface water low. The rainfall for the three months was only 6.58 inches, against 11.95 last year, and 15.04 the year before, or an average of 11.2 for the last 47 years. The average temperature was 64.3 degrees, last year 64.4, the year before 65.2, and 65.4 on an average for the last 47 years. Cases were found amongst children of American, Swedish, Italian, French, Irish and Jewish parentage, so that nationality appeared to have no bearing. There is in one place a colony of a thousand Italian marble cutters, but amongst them there were only two cases.

The following table shows the results reduced to percentages :

Fatal cases	13.
Recovered	25.
Improved	30.
Unimproved	32.

Conclusions.

In the outset one has to make the humiliating admission that no useful pathological results were obtained. In no case was an autopsy permitted, and there is no authority in the State of Vermont to enforce the demand. The examination of the blood and excreta was negative.

The diagnosis is yet uncertain, as most diagnoses are which are based upon clinical considerations alone and unsupported by the results of a pathological examination.

It must rest between cerebro-spinal meningitis, multiple neuritis, poliomyelitis, or a combination of the last two.

1. Cerebro-spinal meningitis may, I think, be set aside at once under the force of the facts already alluded to. Epidemics of this disease are common enough, and its general course is definite with a special symptomatology. In the present case there was an almost entire lack of those symptoms and there were, besides, manifestations which have never been noticed in epidemics of cerebro-spinal meningitis.

2. H. Openheim, Berlin, in his work on diseases of the nervous system, emphasizes the view that poliomyelitis is due to an infective micro organism, and in the present epidemic there was much evidence pointing in the same direction. Indeed, Medin, of Stockholm, has reported what he considers as an undoubted epidemic of poliomyelitis, there being 44 cases. There is a strong temptation to regard the present outbreak as of a similar nature. Clinically the course of the disease much resembled poliomyelitis, as a reference to the cases makes clear. There was the initial feverishness, aching pains, abrupt paralysis of the nature commonly known as "infantile," indeed the distribution of the paralysis is highly characteristic If it were not for the disturbance in the vagus, one would have no hesitation, on clinical grounds, in pronouncing the epidemic one of poliomyelitis. The mode of onset, the paralysis itself, the age of patients, the season at which the epidemic occurred, the distribution of

the paralysis and the subsequent behaviour of the muscles, all point to this disease. Besides it is not uncommon to have cerebral disturbance in Poliomyelitis, convulsions and coma, and even diplopia has been noted. In the cord of a child dead of this disease, the lesion is not confined to the cells of the anterior horn; there may be a general hæmorrhagic myelitis and even obvious meningeal involvment. There may also be pain referred occasionally to the course of the nerves and simulating a peripheral neuritis. In an epidemic, including so many cases, it is not probable that they would all adhere to the classical standard, and it is to be expected that some would overflow into the class of neuritis or cerebro-spinal meningitis.

3. The evidence in favour of the outbreak being due to peripheral neuritis, rests upon the disturbance in the vagus. But if one regards, with Gowers, "Symmetrical weakness of the anterior muscles situated in the forearm and in the corresponding muscles in the lower limb," as the leading motor symptom, then it will not explain the present malady since it was absent in 55 per cent. of the cases. Indeed the paralysis was "characteristically random in distribution" that is characteristic of poliomyelitis, and Gowers further affirms that the nerve trunks are sometimes probably inflamed in the latter affection.

Finally, one is driven to the conclusion that the cases constituting the epidemic mainly followed the type of poliomyelitis, but that in some there were elements strongly suggestive of multiple neuritis, either as an independent affection or the common results of a common cause.

Hospital Reports.

MONTREAL GENERAL HOSPITAL.

Dr. Armstong's Wards.

[Reported by Dr. Bazin.]

Appendicitis with Median Abscess Tumour.

Female, aet 17. Gave history of illness dating back twelve days, beginning with abdominal pain, general at first, but afterwards localized to the right iliac fossa. Vomiting occurred the first two days. Constipation has been the rule with a slight diarrhœa at the end of the first week. The abdomen became suddenly distended during the first two days.

Past History--No attack similar to the present. For past six months has not menstruated, but one week before her illness she had a copious bloody discharge from the vagina. She is also of questionable character.

Examination shows a fairly nourished, rather anæmic young girl. Expression is anxious, intelligence of a low order.

Abdomen is prominent over the hypogastric area, simulating a six months' pregnancy. The tumour is resistant, but a subtympanitic note is obtained all over that area.

There is very slight tenderness on deep pressure in the right iliac fossa.

Vaginal examination showed the uterus to be crowded downwards and backwards. The vaginal walls were pressed upon by a fluctuating mass which persisted after catheterization and bimanually was in connection with the abdominal tumour, which in the examination under ether appeared to be notched in the median line and extending more to the right than to the left.

The finger in the rectum showed its anterior wall to be pressed backwards almost to the point of protrusion through the anus and the posterior cul-de-sac entirely filled by the same fluctuating mass.

In catheterization a large amount of urine was withdrawn, but at its completion the catheter could still be passed far up the bladder.

The patient was operated on the day after admission. On opening the abdomen the bladder was found adherent to the anterior abdominal wall for about four inches above the pelvis. On entering the abdominal cavity above the bladder a large pus cavity was discovered which contained from 30 to 40 ounces of dirty pus with a heavy fæcal

odour floating free, in which was found the fæcal concretion usually present in cases of appendicitis.

The boundaries of the cavity were, below and posteriorly the true pelvis; laterly, on the left the rim of the true pelvis, on the right the ilium; anteriorly the bladder and anterior abdominal wall to the level of one inch below the umbilicus; above the greatly thickened omentum and the transverse colon, together with the small intestines, mesentery thickly matted together.

The cavity was irrigated and packed with iodoform gauze.

Plaster of Paris Applied in Direct Apposition to the Cutaneous Surfaces in Cases of Fracture as Recommended by Bardeleben.

Case I.—Male, aet 63. Fracture of fibula four inches from malleolus. No deformity or displacement.

Put up in plaster bandaging on third day, exit eight days later with the splint still in position, fitting perfectly, causing no discomfort from the absence of padding.

Case II.—Male, aet. 32. Compound fracture of right libia, midway from knee to ankle. Severe comminution of upper fragment.

Patient had travelled 60 miles by rail with leg in straight splint and there was enormous swelling of the limb.

Plaster applied on third day, leaving a window opposite the wound and the leg was slung on a cradle.

Instead of the ordinary dressing being applied over the wound the method adopted by Trevés, of London, was followed, loose powdered iodoform being heaped up over the break in the skin and renewed when necessary.

Nine days later the plaster was renewed, as the swelling had so diminished that the leg was loose in the bandage,

The temperature throughout has been most satisfactory, the first three evenings being 100½°, for the succeeding six days being 99½°, since which time never being above 99°.

GONORRHŒAL CYSTITIS.

Male, aet. 28; admitted October 8.

Complaints—Pain and frequency of micturation with hæmaturia.

History of contracting gonorrhœa four years ago which lasted eight months in an acute state, subsiding into a gleet, which continued till February, 1894, when a second infection took place, and a third in June, 1894. Since the last he has received no treatment and the discharge is still profuse.

Since the last infection he has been drinking heavily.

On Thursday, October 4, the present symptoms began, patient passing urine about every 10 or 15 minutes, and after each act passing a small quantity of clotted blood.

Examination showed the purulent urethral discharge and about 1½ inches from the meatus a hard fibrous mass surrounding the urethra for ¾ inch of its length. This admitted a 6 sound. About 7 inches from the meatus and presumably in the bulbous urethra there existed another stricture admitting a 4 sound. The passing of a catheter caused great pain. The hypogastrium was slightly tender on deep pressure.

Rectal examination showed no prostatic enlargement or tenderness.

Urine slightly acid in reaction, abundant deposit of pus cells. It contained a small quantity of blood when passed naturally, but when drawn off by a catheter was perfectly free from blood. About half an hour after the catheter was withdrawn the patient would pass about ℥ii of clotted blood, accompanied by great pain and much straining.

Treatment—Ac. boric, internally.
Ice bag to perineum.
Daily irrigation of bladder with sol. ac. boracic.

Nov. 12.—No further hæmorrhage, so ice bag discontinued. As there was still great pain and frequency of micturition the ac. boric internally and locally to the bladder was discontinued and the following substituted:

Internally—Tr. hyoscyamus and pot. bicarb.

Locally—Hot fomentations to hypogastrium.

Injection into the bladder once a week of the following emulsion: Iodoform 1 part, glycerin 20 parts, ℥i of this solution to the litre of water. Sterilized as recommended by Schede.

As much as possible was injected and the patient instructed to retain it.

The relief from this mode of treatment was immediate and rapidly progressive.

At the first injection ℥viii were retained for 7 minutes; at the second ℥xii were retained for 35 minutes, and following this there was no further pain during micturition and the frequency was greatly diminished. At the third injection ℥xvi were retained for 2 hours.

Nov. 16.—Patient discharged. No tenderness, no pain during micturition. Passes urine only 4 or 5 times in the 24 hours. There is still a slight purulent discharge from the urethra. Patient declines to have strictures treated.

Case Reports.

THREE CASES OF CŒLIOTOMY.

By A. LAPTHORN-SMITH, B.A., M.D., M.R.C.S.

Gynæcologist to Montreal Dispensary; Surgeon to Western Hospital.

Case I. Hæmatoma of Ovary with Double Pus-tubes.

Miss C. was referred to me as a case of fibroid tumour of the uterus and as being suitable for electrical treatment. This diagnosis was not without some foundation, for on placing the hand on the abdomen one could detect a tumour or enlargement of the uterus, extending nearly to the umbilicus. By bimanual palpation the cervix was found to be small, but the uterus appeared large and wedged in the pelvis, and quite immovable. The tubes and ovaries could not be felt. On firm pressure the tumour was felt to be solid, or in places slightly elastic. The history rather supported the diagnosis. She was 26 years of age; had begun to menstruate at the age of fourteen, the flow always having been profuse. It had never been painful until six years ago, since which the pain of the periods had been gradually growing more severe, until she was at length compelled to go to bed every month. Latterly the pain had been much worse a week after the periods than it was during the flow. She had had several attacks of pelvic peritonitis during the last year. Electricity was discontinued, as the patient did not improve. Nothing remained for me then but to open the abdomen and remove the appendages which would stop the pain, and, it was hoped, arrest the growth of the tumour and the hæmorrhage. Preparations were also made for extirpating the uterus should the necessity for it arise. The abdomen was opened, after the usual preparations, on the 7th September. On introducing my fingers to search for the appendages, the latter could not be felt: the tumour was adherent to the pelvis, and it was covered to a large extent by adherent intestines. The adhesions were broken up, when for the first time it became apparent that the tumour was made up of several different elements. After some difficulty a pus tube was brought out, which was tied close to the uterus, but was so disorganized that the ligature cut through. I then came upon a slightly fluctuating mass, the size of an orange, which was also dissected out, proving to be a hæmatoma of the left ovary, but it broke while being delivered and its dark grumous contents escaped, welling up out of the incision. This was carefully sponged away and the ovary was tied and removed. A large pus tube was then removed from the right side, and finally the right ovary which was somewhat enlarged. Nothing now remained of the tumour but a normal sized uterus, from which the peritoneum was completely removed, and from which there was a good deal of oozing. When this had been stopped, a glass drainage tube was

inserted, and the abdomen closed by through and through silk worm gut sutures which were left in one month. Six ounces of bloody serum were pumped from the drainage tube, when the liquid becoming paler the tube was removed in forty-eight hours. The patient declared the following day that the pain which she had suffered for several years was entirely gone, and the pain of the operation was nothing compared to it. She was up in two weeks, and went home on the twenty-third day.

This case was especially interesting to me for several reasons. First, it bore out the truth of Apostoli's assertion that a patient who cannot bear moderate doses of electricity has diseased tubes, and should be treated by surgery. Second, it bears out the truth of Lawson Tait's assertion that one can never be sure of what he will find in the abdomen until he has his fingers in it, indeed I might add the words, "and sometimes not even then." When we remember that Lawson Tait has opened the abdomen more often than any other man who has ever lived, and when we consider what enormous experience that meant no one should consider himself infallible in this respect.*

Case II. Pus tubes removed during an acute attack of peritonitis. Recovery,

The patient was twenty-six years of age, married at twenty and had three children. She had never been well since her marriage, but had been getting very much worse since two years. Her last child was a year old, and she had no miscarriages. While pregnant with her last child she had suffered a good deal, and had had a bad recovery. During the past year she had had several attacks of peritonitis, confining her to bed for several weeks each time. Two weeks before she was taken with an unusually severe attack, from which her physician did not expect her to recover. She was very emaciated, was constantly crying out with pain in spite of large doses of opium, while her abdomen, which was covered with poultices, was very much distended, her pulse being thready and fast, and her temperature high. She was at once put on salines and large doses of quinine, with almost immediate relief of the pain and distension. But her temperature remained at 103. On examination, per vaginam, Douglas cul-de-sac was found to be full of exudation, which was thought to be due to pus tubes and ovaries. As it was the opinion of all that she could not continue very long as she was doing, it was decided to operate that afternoon. The patient absolutely refused to leave her house, so the operation was performed there. Both tubes were dug out with great difficulty being imbedded in layers

* Since writing the above, a paper by Dr. J. F. W. Ross, of Toronto, has appeared in the *American Journal of Obstetrics*, in which he reports several cases in which he removed large pus tubes from women who had been sent to him for fibroid.

of exudation in various stages of organization, but without rupturing them. One tube tore out of the ligament while extracting it, and both cut like cheese when the ligature was applied. Notwithstanding this, there was very little oozing. Owing to the very large area from which the peritonenm was stripped off, I thought it best to pnt in a drainage tube which was left in only one day. The temperature took three days to fall to normal, and the pulse improved steadily, although she was not able to leave her bed for five weeks. When last heard from she was improving steadily.

Case III. Hydrosalpinx and bound down tubes and ovaries, causing severe dysmenorrhœa. Removal. Recovery.

Miss B., 30 years of age, had been under my care for several years for severe dysmenorrhœa, and almost constant pain between the periods. Palliative treatment having proved of little avail, removal of the appendages was suggested, and she readily agreed to have that done. Cœliotomy was performed on the 13th October. Although the ovaries and tubes were covered with adhesions, the latter were easy to break, and both tubes and ovaries were removed, and the uterus attached to the abdominal wall. No drainage tube was used. The fascia was sewed with catgut and the silk worm gut previously introduced was then tied. She made a successful recovery, being up in two weeks. On examining the tubes they were both found to be distended with fluid which could be squeezed out of their uterine ends in a clear stream, but it was impossible to introduce the finest filiform bougie into the uterine ends at all, and only a distance of half an inch into the fimbriated ends. The tubes were bent by adhesions so as to form a number of knuckles, which were probably the cause of the severe pains every month. One ovary had a cyst in it, which ruptured while removing it, and into which one can introduce the end of the thumb. It apparently contained clear fluid. The other ovary has a thick hard surface, due apparently to chronic iuflammation of the peritoneal coat. When the ovaries and tubes when first removed were placed in water they were found to be covered with fringes of shreds representing the torn adhesions. Dr. Joseph Price had a quaint way of saying to his assistant, when he removed appendages like these, "don't let these tramps out until they have seen the specimens in water for fear they will go away saying that they had seen healthy ovaries removed."

It will be admitted that if one cannot relieve a woman in these circumstances by the means which were employed during three years of treatment, and if, at the end of that time, she is not able to keep a situation from this cause, we are fully justified in removing the appendages. My experience of tearing the appendages loose and leaving them to contract fresh adhesions has not been favourable, and I have never tried to save distended tubes by opening them

and sewing them up again, as I feel sure that fresh adhesions would continue to worry the ovaries, and the tubes would refill. Pozzi and Polk have been doing it, but from recent reports of Polk's cases the result has not been satisfactory.

Reviews and Notices of Books.

Medical Nursing.—Notes of Lectures given to the Probationers at the London Hospital. By the late JAMES ANDERSON, M.D., F.R.C.P., etc.; edited by Ethel Lamport, Associate of the Sanitary Institute, etc., with an introductory biographical notice by Sir Andrew Clark, Bart. London: H. K. Lewis. 1894.

This book has been compiled from the notes used by the late Dr. Anderson in his lectures on Medical Nursing given to the nurses of the London Hospital. On reading these lectures one can only regret that such a good friend has been lost to the nursing profession, for his introductory lecture shows what a nurse should be, in his opinion, an opinion evidently founded on experience.

He divides his subject according to the various systems of the body, commencing with the digestive system, and takes up the physiology of each along with diseases each is subject to and the appropriate nursing.

We most cordially recommend the work to all nurses for perusal and study. They will find it most entertaining reading, as well as most profitable for study.

Travaux D'Electrotherapie Gynecologique. Par le Dr. G. APOSTOLI, Paris.

Dr. Apostoli begins his work by a series of observations, in number 106, upon his method of treating fibroid tumours of the uterus by electricity. These cases are exceedingly interesting to read in the account given of them, and reflect great credit on the well-recognized ability of this world-famed apostle of electricity in the treatment of uterine diseases.

The work then gives the experience of Thomas Keith, M.D., in the same direction. Also quite a space is given to the experience of Sir Spencer Wells in the same direction. Then the work takes up the transactions of the late Brighton meeting relating to the treatment of fibromata of the uterus with electricity (May, 1888).

Dr. Apostoli also brings in the experience of Americans—Dr. Lawson Tait, now of London, Inglis Parsons, Robert Bell, Grailey Hewitt, Braithwaite, Routh, Madden, Imlach, Horrocks and a host of others too numerous to mention.

Dr. Apostoli's work is a most complete one and contains everything which can be desired by the most fastidious upon matters relating to the electrical treatment of neoplasms of the uterus. We can highly recommend it to such.

Canadian Medical Literature.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL.]

PERIODICALS—OCTOBER, 1894.

ONTARIO MEDICAL JOURNAL.

Inflammation of the middle ear extending to the mastoid cells and meninges ; subdural abscess at base—A. J. Horsey, Ottawa, p. 81.

CANADA MEDICAL RECORD.

Psoriasis, a clinical lecture—W. S. Gottheil, New York, p. 1.

L'UNION MÉDICALE DU CANADA.

(1.) Traitement de la blennorrhagie par les lavages au permanganate de potasse—A. Lemoyne de Martigny, Paris, p. 505.

Notes sur un cas d'accouchement chez une femme albuminurique —H. E. Desrosiers, Montreal, p. 526.

NOVEMBER—1894.

CANADA LANCET.

Treatment of Placenta Prævia—J. Algernon Temple, Toronto, p. 69.

Treatment of Hernia—Alexander Dallas, New York, 72.

MARITIME MEDICAL NEWS.

(2.) The use and abuse of the various cautery agents in the treatment of nasal affections—E. A. Kirkpatrick, Halifax, N.S., p. 411.

(3.) The present status of asthenopia—F. Buller, Montreal, p. 474.

Cases from practice—Stephen Dodge, Halifax, N.S., p. 418.

DOMINION MEDICAL MONTHLY.

(4.) The antitoxine treatment of diphtheria—J. J. Cassidy, Toronto, p. 141.

(5.) Fæcal intoxication—William Graham, Brussels, Ont., p. 148.

A Medico-Legal Romance—J. N. Steeves, St. John, N.B., p. 151.

(5.) Ocular headaches—G. Sterling Ryerson, Toronto, p. 165.

L'UNION MÉDICALE DU CANADA.

(4.) Le nouveau traitement de la diphtérie—E. P. Benoit, Montréal, p. 561.

Le traitement des maladies des trompes de Fallope et des ovaires—A. Lapthorn-Smith, Montreal, p. 567.

(1.) This article, which is the author's "Thèse inaugurale, Paris, 1894," sets forth the value of the treatment of gonor-

rhœa by irrigations with solutions of permanganate of potash. This salt in very weak solutions has almost a specific action in this disease, for after a single irrigation of 1.2000 the gonococci are observed to be greatly diminished in number. How this occurs is not certain ; it is not due to its bactericidal action, for strong solutions produce a rapid increase in the number of the gonococcis; but probably, by solutions of 1.4000 to 1.1000 producing an œdematous swelling of the urethral mucous membrane, accompanied by a free serous discharge, which seems to be an unfavourable medium for the growth of the micro-organism. The apparatus employed is a blunt pointed glass nozzle connected by a rubber tube to an elevated reservoir. The strength employed is for the anterior urethra 1.4000 to 1.500 and the posterior 1.4000 to 1.1000, of this half a litre is required for the anterior urethra and one litre for the whole canal. The temperature may be hot, warm or cold, the author preferring the latter as less liable to produce a feeling of weight in the pelvis and less tenesmus. The height of the reservoir should be for anterior urethra 50 to 60 centimetres, but for the posterior 1.10 to 1.50 metres, in order that the pressure may overcome the resistance of the sphincter.

Method of using the irrigation: After urination, the penis is thoroughly washed and the nozzle inserted into the meatus. The canal is then distended and emptied alternately until the quantity of the solution is exhausted. If it is necessary to irrigate the posterior urethra the reservoir is gradually raised to the maximum height and kept there until the resistance of the sphincter is overcome by the pressure and the fluid runs into the posterior urethra. The bladder contracts more or less sharply, but if the nozzle be held in the meatus the fluid soon begins to flow again and there is no more trouble. If, however, the pain becomes severe and the desire to urinate strong it is well to let the patient do so and commence again. At the end of the irrigation the patient should thoroughly empty his bladder.

In gleet the irrigation should be carried out once a day, beginning with 1.3000 and increasing to 1.1000. In a week the discharge will cease.

In the declining stage of acute gonorrhœa it is well to irrigate twice daily, increasing the strength gradually from 1.4000 to 1.1000. The gonococci should be searched for daily until they have disappeared altogether.

Contra-indications for the treatment are orchitis, epididymitis, stricture and hypertrophy of the prostate.

Although this form of treatment gives admirable results there is danger of peri-urethral abscess, free hæmorrhage, &c., when improperly used, the causes of these complications being (1) irrigation with too strong solutions, (2) too frequent irrigations, (3) incomplete irrigations, (4) beginning irrigations after the symptoms have been rendered too acute by santal.

(2.) The author desires to sound a note of warning against the too prevalent practice of frequent and long continued applications of the cautery agents in the treatment of nasal affections. He refers to the delicacy and importance of the nasal mucous membrane, and that it was often the subject of too harsh treatment. Caustics were used, perhaps, more for hypertrophic rhinitis than for anything else, and often too severely. By their injudicious use he had seen the mucous membrane destroyed and in some cases very serious sequelæ, such as loss of hearing and mastoid disease, follow. He confines himself to the use of three agents, chromic acid, tri-chlor-acetic acid and the electro-cautery. The chromic acid he prefers as an application to the anterior nares, reserving the electro-cautery for posterior hypertrophies.

(3.) This paper appeared in the September number of this JOURNAL.

(4.) These communications are *resumés* of Dr. Roux's paper on the prophylaxis and treatment of diphtheria read at the International Congress of Hygiene at Buda Pesth, when he gave the results of his new treatment by the antitoxine

Out of 169 diphtheritic anginas treated by serum there was a mortality of 21, or 12.4 per cent.

		Deaths.	Mortality.
Pure diphtheritic angina	120	9	7.5 per cent.
Associated anginas	49	12	24.5 "
Anginas associated with micrococci	9	..	.... "
" " staphylococci	5	..	.... "
" " streptococci	35	12	34.2 "

(5.) These two papers deal chiefly with headaches, but from very different causes. The first refers to that very large class of sufferers whose headache is associated with a well marked train of symptoms as depression, sense of fatigue, buzzing in the ears, disturbance of sight, vertigo, loss of appetite, sallow complexion and constipation, and is, due to the absorption of poisons from the intestinal tract. Severe diarrhœa in infants, low spirited hypochondriasis, many forms of so-called neuralgia, chloranæmia and some forms of eclampsia are but cases of poisoning by absorption of putrefactive toxines from the intestines. Such cases are always benefited or cured by active purgation, followed by laxatives and tonics.

The second paper draws attention to headaches caused by (1) refractive errors ; (2) anomalies of the muscular apparatus ; (3) functional disturbance of the eye, and urges that, in all cases of headache, the refraction and the state of the ocular muscles should be investigated where it is possible, and that these very frequent causes of headaches must be eliminated before a positive diagnosis can be given.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Fracture of the Skull, with Pulsating Tumour—Dr. F. J. Shepherd.
Tubo-Ovarian Pregnancy—Dr. T. Johnson-Alloway.
Ovarian Cyst—Dr. T. Johnson-Alloway.
Uterus Bicornis—Dr. T. Johnson-Alloway.
Double Pyosalpinx—Dr. T. Johnson-Alloway.
An Intra-ocular Tumour—Scopalamine as a Mydriatic—Dr. F. Buller.
The Pulse and Respiration during Ether Anæsthesia with Clover's Inhaler—Dr. G. Gordon Campbell.
Goring by an Ox with Wound of Bowel—Dr. F. J. Shepherd.
Case of Medico-Legal Interest—Dr. Springle.
Polydactylism—Dr. J. Chalmers Cameron.
Excision of Maxilla—Dr. Armstrong.
Monstrosity, Missed Abortion, Maternal Impressions—Dr. Gurd.
Paralysis in Children—Dr. Macphail.
Ovarian Cystoma—Dr. A. Lapthorn Smith.
Tubal Pregnancy—Dr. A. Lapthorn Smith.
Hæmatoma of Ovary—Dr. A. Lapthorn Smith.
Primary Cancer of the Liver—Dr. Adami.
Phlebolith of Prostatic Plexus—Dr. Adami.
Primary Cancer of the Kidney—Dr. Martin.
Embryo in Sac—Dr. J. Alex. Hutchison.
Diaphragmatic Hernia—Dr. Adami.
Pus tubes and Hæmatoma in the Same Patient—Dr. A. Lapthorn Smith.
Pus tubes Removed during an Acute Attack of Peritonitis—Dr. A. Lapthorn Smith.
Double Hydrosalpinx, Causing Severe Dysmenorrhœa—Dr. A. Lapthorn Smith.
Primary Carcinoma of the Kidney—Dr. J. G. McCarthy.
Secondary Enchondroma in a Bitch—Dr. Adami.
The late Dr. Ed. A. McGannon.

Stated Meeting, October 19th, 1894.

G. P. GIRDWOOD, M.D., PRESIDENT, IN THE CHAIR.

Drs. Elzear Pelletier, F. J. Hackett, C. F. Wylde, H. Tatley and W. E. Deeks were elected ordinary members.

Fracture of the Skull with Pulsating Tumour.

Dr. SHEPHERD showed a little girl nine years old, who

in 1889 had been under his care at the Montreal General Hospital. The following is a brief account of the case:

Florence C., age four years, admitted September 9, 1889. Ambulance case. Fell from second story window on to stone pavement. Picked up unconscious and continued motionless for half an hour. Condition on entry, unconscious, pupils unequal, swelling over the right orbit with a semi-fluctuating feel, purposeless movements of the limbs, Cheyne-Stokes respiration. Her whole forehead and eyelids were greatly swollen, and at 12 p.m. that night her temperature rose to 103°. Three days later she seemed to be conscious, but she was unable to open her eyes from œdema. Eight days after her admission she spoke, asking for food, her condition then was slowly improving. She had then a fluctuating swelling over the right eye which pulsated, and running upwards and backwards from this was a fissure. Over the right parietal bone there was another fluctuating swelling, large and flat, but not continuous with the one in front. The fissure, however, ran into it. The hole over the orbit is still present and one can feel the pulsation of the membranes through it. The line of fracture running up from this, corresponding to the fissure mentioned above, can still be made out with the finger. The swelling over the parietal bone has disappeared. The child's intelligence has not been good; her mother thinks her different from other children and not bright.

Dr. GORDON CAMPBELL remembered the case very well, especially so as he had given an absolutely bad prognosis after examining her condition on entry.

Dr. KINGHORN, House Surgeon for Dr. Alloway, read the following reports.

(1.) Tubo-ovarian Pregnancy

Patient, aged 31, complained of metrorrhagia, dysmenorrhœa, pain in the lower part of the abdomen and pain in the back. Menses commenced at 13 years and continued normal till 2½ years ago, when her last child was born.

Since then the above symptoms have gradually developed. Examination revealed lacerated cervix, leucorrhœa, anteversion and a mass in the posterior fornix. Cœliotomy recommended and performed. Upon opening the abdomen a mass about the size of an orange was observed lying in the left half of the pelvis and behind the uterus. The mass was united by strong adhesions to the posterior wall of the pelvis, to the left broad ligament, to the whole extent of the rectum, and to the posterior face of the uterus. The adhesions were separated with difficulty by the finger, but not before the mass had been ruptured and dark coloured clotted blood escaped. There was very little bleeding and none of the neighbouring viscera were injured. The pedicle of remains of tube and ovary of left side was tied off in the usual way. The abdomen was washed out with boiled water and wound closed without drainage. It is now the fifth day since the operation and the patient has been doing perfectly well.

Dr. ALLOWAY, commenting on the specimen, remarked that after removing the mass he noticed it embraced within its limits the ovary and the fimbriæ of the left tube, and the thought occurred to him that its situation suggested a tubo-ovarian pregnancy. The sac, which was really a distended ovary and contiguous portion of the tube, was filled with blood, etc., a condition not unusual in extra-uterine pregnancies. The specimen was submitted to Dr. Wyatt Johnson for microscopical examination, and his report confirms this view. Thickened and altered chorionic villi were found in that portion of the mass which corresponded to the dilated end of the left tube; no signs of a fœtus were detected.

(2.) Ovarian Cyst. (Marsupialization Method Adopted.)

Patient complained of pain over sacrum, in the left groin and hip, painful micturition, dysmenorrhœa and sterility. Menses commenced at 14 years, married at 19 years; no children, no miscarriages; irregular and painful menstruation, especially marked during the past two years. Ex-

amination revealed tenderness in both iliac regions, more marked in the right; tenderness extending down the right leg to knee-joint. Anteversion of uterus, being firmly fixed behind the pubic bone; a large semi-pultaceous mass occupied the left pelvis, projecting into Douglas' pouch of that side and firmly fixed to the uterus in front. Cœliotomy recommended and performed. On opening the abdomen the omentum was found to be adherent to a mass beneath it. The mass proved to be a large cyst containing clear fluid, and grew from the vicinity of the right ovary. It was connected with nearly all the abdominal viscera by adhesions so dense that the attempt to separate them had to be given up. From this large cyst sprang a number of daughter cysts. There was nothing left to do but drain off the cyst contents. Their cavities were converted into one main cyst, then washed out with boiled water and the wall of the cyst sutured to the peritoneum. The cavity of the cyst then opened into the wound and thus constituted a condition somewhat similar to that found in the marsupialia. After thoroughly drying the cyst walls with sterilized gauze, its cavity was packed with iodoform gauze, which acted as a drain. Every other day the iodoform gauze was changed. On the 20th day this was discontinued and the opening allowed to close.

(3.) Uterus Bicornis.

This condition was met with accidentally in the course of an abdominal section for removal of the appendages. Upon opening the abdomen the uterus was seen to consist of two corpora with only one cervix, the bodies being separated from each other by a well-marked sulcus. The right one was larger than the left.

Dr. ALLOWAY showed a wax model of the condition which he said resembled very closely the pelvic organs as they appeared *in situ*. His object in operating was only to remove the appendages, and the condition was thus noticed. Bicornate uteri, he thought, though heretofore regarded as very uncommon, would in the future be more often met

with, owing to the increased frequency of abdominal sections. This condition was due to the non-fusion of that part of the Mullerian ducts which go to form the body of the uterus.

(4.) Double Pyosalpinx.

Patient complained of menorrhagia, weakness, dyspareunia, pains in the back and lower part of the abdomen and left leg. Menses commenced at 16 years, she was married at 27 years, had one child and one miscarriage. The pain in the back and dyspareunia had existed for the past three (3) years. Examination revealed uterus retroverted and bound down by adhesions, which inclined it somewhat towards the right side. Removal of the appendages was recommended and performed. On opening the abdomen the right fallopian tube resembled a small sausage, the fimbriated extremity had closed in, giving the appearance of an inverted cone ; the ovary was embedded in the tube which was attached by strong adhesions to the intestines. The left ovary was united by dense adhesions to the fimbriated extremity of the corresponding tube, which bore a close resemblance in appearance to the right, and was also attached by adhesions to the sigmoid flexure. The left ovary proved to be transformed into a large blood cyst. The uterus was so firmly bound to the sacrum by adhesions, that these had to be ligatured and cut before it could be released. It was then attached to the anterior abdominal wall. Both ovaries and tubes were removed.

Dr. ALLOWAY, commenting on the specimen, said it was chiefly of interest as showing so clearly the cause and manner of the collection of fluid in a tube, as was the condition here, the initial point being the cementing of the abdominal end of the tube by a process of inversion of the fimbriæ. This inversion and cementing was most beautifully demonstrated in the present specimen, and he had never seen one where this pathological truth was so perfectly exhibited.

Dr. ADAMI had found bacilli in the specimens submitted

to him, but not tubercle bacilli. They were both shorter and more stubby than the latter. The condition was purely one of chronic inflammation, but it showed that curious proliferation of the lining membranes of the tubes, (forming various folds, and a fusion of these folds so as to look like a cancerous condition), which is the result of long standing chronic congestion and consequent overgrowth of the parts.

An Intra-ocular Tumour—Scopalamine as a Mydriatic.

Dr. BULLER presented an ordinary intra-ocular sarcoma growing from the choroid, pigmented as usual, and nearly filling the scleral cavity. So far as the growth itself was concerned, he did not know that it presented any points of special interest, but merely brought it to notice as an illustration of the diagnostic difficulties which these intra-ocular growths sometimes offered, difficulties which are rather augmented than diminished by the patient's version of his troubles. The eye was removed a few days before from an old man of 75 years, who stated positively that he had never found anything wrong with the eye until about the middle of last April, when he suffered a slight injury from a piece of brushwood. After this the eye was sore for a few days, but apparently recovered perfectly. Some three or four weeks later he noticed it had become blind. The blindness continued without pain or inconvenience till about four weeks ago, when without assignable cause the eye became inflamed and intensely painful. The pain was that of a periorbital neuralgia, as well as in the eyeball, and did not yield in the least to any palliative treatment suggested by friends or prescribed by his physician.

On examining the eye it presented a moderate degree of pericorneal congestion, resembling that of subacute glaucoma. The intra-ocular tension was only slightly increased, the cornea being perfectly clear and bright. The iris appeared somewhat thickened, and presented visible blood vessels in considerable numbers. The pupil could not be dilated in the least by atropine or scopalamine, nevertheless he was able to make out with the ophthalmoscope a small portion

of one retinal blood vessel on a yellowish surface close behind the lens and inferred from this a total detachment of the retina. This, together with the fact that the pain was out of all proportion to the inflammatory phenomena, the loss of vision complete and the tension somewhat increased, rendered the diagnosis of intra-ocular sarcoma extremely probable, notwithstanding the patient's statements in regard to the comparatively recent origin of the blindness. Dr. Buller stated that it was likely that the growth was of much older date than last spring; two or three years at least must have elapsed since it commenced, and no doubt the blindness, more or less complete, existed long before the injury, but was unnoticed by him until particular attention was called to the condition of the eye at that time. There was one other point of interest about this case. Finding that the pupil would not dilate with atropine, he used the new and stronger mydriatic scopalamine. Two drops of a four grain solution were used in the morning at an interval of about an hour and caused some vertigo, but a third drop about 5 p.m., was followed by mental hallucinations and a sort of stupor which lasted for several hours. The patient was inclined to be garrulous, but talked incoherently and did not seem able to recognize any one about him; there was also almost complete loss of co-ordination of ordinary muscular movements, the face was somewhat flushed but of a good color, both respiration and pulse were about normal, and after a night's sleep he awoke the next morning in his usual health.

In this case the toxic effect of the scopalamine was very marked, but apparently not of a dangerous character.

The Pulse and Respiration During Ether Anæsthesia with Clover's Inhaler.

Dr. GORDON CAMPBELL read a paper with the above title and showed a number of charts which had been prepared by Drs. Cameron, Brown and himself from notes taken during anæsthesia. The normal or usual effect was shown to be a very considerable quickening of both pulse and

respiration at the outset, then gradual slowing of the pulse down to the normal rate, but continued rapid respiration while the anæsthesia lasted, so that the pulse-respiration ratio was altered. The rate of the breathing was still further increased reflexly by certain manipulations on the part of the operator. These were: stretching the sphincter ani and working with the mucosa of the rectum, sometimes stretching the perineum, rough handling of the peritoneum especially breaking down adhesions and working with the ovaries and testes. The pulse rate was increased by hæmorrhage, and both pulse and respirations by an overdose of ether. This latter observation had been worked out experimentally. The practical points were to watch both pulse and respiration carefully. Quickening of respiration alone was accounted for reflexly, and a less amount of ether should be given, as otherwise the increased rate of breathing would lead to an overdose. Quickening of both pulse and respiration meant an overdose; quickening of the pulse alone meant hæmorrhage. The results were obtained by tabulating the notes of one hundred cases.

Dr. KENNETH CAMERON since last Christmas had kept records of forty cases in which he had administered ether by Clover's inhaler. The cases were all gynœcological and his results were almost identical with those of Dr Campbell. He had noticed that the respirations were always increased by what might be called intra-abdominal reflexes, such as handling the peritoneum, as in tearing adhesions, tying off the ovary and its appendages, washing out the abdomen and pulling on the round ligament. He had had no experience of reflexes arising from manipulations about the rectum. An excess of ether was another cause of increasing the rapidity of the respirations as well as the pulse. The pulse showed the same initial rise with the gradual fall as the administration proceeded. The chief cause for increased rapidity of the pulse was hæmorrhage.

The lesson to be learned from the investigation was that when the respirations were increased, without any of the recognized reflex causes being present to account for it, the anæsthetist should suspect an excess of the ether and remove the inhaler.

Dr. GEORGE A. BROWN had given ether for Dr. Alloway for about three years, during which time he kept records, similar to those of Dr. Campbell, of his cases. He had used Allis' inhaler for the first year and a half, after that he employed Clover's inhaler. His results closely resembled Dr. Campbell's. As to the relative merits of the two inhaler's, he thought Clover's had the advantage, inasmuch as you could more accurately ascertain the quantity of ether being administered. Working with Allis' one was apt to give too much of the drug at the start, and as a consequence did not get the sharp fall in the pulse that ought to follow the initial rise, and in fact the anæsthetist often discovered that he had his patient deeply anæsthetized when a lighter degree would suffice. Still he believed as one became accustomed to the use of Allis' apparatus he would be able to judge of the proper amount to give at the commencement, and the results of both inhalers would then be practically alike. He agreed with Dr. Campbell as to the effect of intra-abdominal reflexes upon the respirations, and had had one opportunity of noticing the truth of Dr. Cameron's observation as to the effect of pulling on the round ligament.

Dr. GURD, as an anæsthetist of some fourteen years standing and of very considerable experience, had used Clover's inhaler, but not exactly in the manner of the previous speakers. As to the existence of certain regions which, when irritated, reflexly stimulated the respiratory centres, he thought there could be no doubt; and he believed that every anæsthetist must perforce soon become aware of the location of these places of extra excitability. It was his custom never to use the bag of Clover's inhaler, except when the operator was manipulating in these

regions, and he used it then for the purpose of quieting the increased movements of the limbs, which were apt to be thus set up. Apart from this he never felt justified in using the bag of the inhaler, as he believed that pure ether was much less injurious to the patient's system than a mixture of ether and respired air, with all its impurities, which the application of the bag implied. So far as the convenience of the anæsthetist and of the operator was concerned, there could be no doubt that there was an advantage, as by its means the patient was much sooner rendered unconscious; but he thought that this was accomplished at the expense of the patient's vitality.

Dr. WILLIAM GARDNER stated that the only points in Dr. Campbell's paper which he was in a position to confirm were those which related to the reflexes set up while working on the peritoneum. He was especially impressed with the fact brought out concerning the danger of giving too much ether during these moments of unusual respiratory excitation. The patient then breathes more quickly, and hence is apt to take more of the drug, which might easily constitute an excess if the anæsthetist be not on his guard. He further expressed his satisfaction at the evidence of the popularity of Clover's inhaler in Montreal, as he considered himself as chiefly responsible for its introduction here.

Dr. ALLOWAY remarked that in the days of the old-fashioned cone and sponge it was a matter of considerable anxiety to the surgeon as to what was going to take place before the patient was fully anæsthetized, and that throughout the whole operation his attention was more or less distracted from his work by the possibilities of danger arising from the anæsthetic. Now all this was changed. He knew that the quantity of the drug administered was accurately measured, and he felt the same safety in its use as does the physician in prescribing within the limits of the pharmacopœial dose. The only occasion now on which he has to inquire into the department of the anæsthetist was the blocking of the respiratory passages by mucus, and here

the best plan is to stop the administration and allow the patient to vomit, which may be assisted by irritation of the fauces.

Dr. EVANS referred to an article he had recently read in which much the same views were put forth. A point mentioned in this paper was the occasional occurrence of tonic spasm in the recti muscles of the abdomen when complete anæsthesia had been induced, especially where there was a good deal of mucus in the trachea. Substituting chloroform for ether for a little while quickly overcame the spasm. He asked if any of the anæsthetists present had observed this phenomenon.

Dr. F. J. SHEPHERD, speaking of the advantages of ether as an anæsthetic, could not say that his experience was so uniformly favorable as Dr. Campbell's. He thought in men accustomed to consume large quantities of alcohol phenomena were noticed which were both frequent and troublesome. In some a condition of tremor will set in and persist in spite of everything throughout the whole of the anæsthesia. Others, again, frequently show a tendency to hyper-secretion of mucus in the tubes. In such cases he questioned therefore, if it would not be better to use chloroform. Before permanently settling the question, moreover, he thought it would be desirable to have some investigations made amongst men as well as women, as all the cases reported here to-night were, he believed, gynæcological patients.

Dr. ARMSTRONG also would like to see these investigations extended into that numerous class of surgical patients, whose constitutions were not normal, but rather more or less shattered as a result of their disease or accident—the sort of cases which the surgeon gets in the Montreal General Hospital, especially those emergency cases where an operation has to be performed within a few hours after their admittance One of the most prominent features of Dr. Campbell's paper, was the great success he had achieved by the Clover's inhaler. He himself had heretofore a strong

dislike to this method of anæsthetising, especially as he had sometimes seen it employed, when the patient was forced to breathe vitiated air for as much as half an hour or more at a time ; still after listening to the results of the extensive investigations laid before them to-night, he thought no reasonable man could deny that when properly used, at all events, the Clover's inhaler was a great success. Another important result brought out by this work was the evident danger of continuing the anæsthetic when the respirations were increased from any cause. By so doing, the patient inhaled an increased quantity of the drug ; and the wonder is, when we consider how little this matter has been attended to in the past, why accidents have not been more frequent. Every anæsthetist should keep in mind the normal rate of respiration under ether, should know readily all the causes which might increase the rate, and watch carefully whether any of them be operating when any undue frequency is noted, so as to satisfy himself that it is not due to an excess of the drug. He should also remember that when the rate of respiration is increased the amount of the drug consumed is also increased, and the danger of administering in excess made greater. Another point made manifest by these papers is the apparent absence of all injurious effects from prolonged administration. If this hold good for that other class of patients, already alluded to, who are not in such good physical condition, as gynæcological patients generally are, it is a very important fact, and one that must sensibly influence surgical procedure. If time is of no consequence, or if it must not be seriously regarded by the surgeon in deciding on his operation, many of our present preferences for one operation more than another, will have lost their *raison d'être*. As an illustration, one may mention the fact that the "Murphy button" owes its chief superiority over the method of suturing in intestinal anastomosis to the saving of time which it allows, and if this saving of time is no longer of such paramount importance, the advantage of the "button" in the minds of many surgeons, will fall to the

ground. The same might be said of many other operations. Yet according to Dr. Campbell's statistics the patient seems to have been in as good condition at the end of three hours of ether anæsthesia as at the beginning, so far, at any rate, as the respiration and circulation were concerned. If this evidence be confirmed by more general investigation, Dr. Armstrong thought that too much credit could not be given to Dr. Campbell for having brought it to light.

Dr. BULLER believed that for short operations, not requiring more than a few minutes to perform, the old-fashioned cone was more serviceable than a Clover's inhaler. He had been accustomed, in little operations performed in his office, to allow the patients to anæsthetise themselves. This was easily accomplished and gave more satisfaction to all parties, as it could be done without violence or vomiting, and the patients quickly recovered from its effects. He also thought that the members of this society had an unnecessarily serious impression of the dangers attached to ether as an anæsthetic; for his part he had been using it for years, and with this simple apparatus, had never any really serious difficulty. He believed that any careful anæsthetist, by watching his patient, could always detect any threatened untoward effect and prevent its development by allowing a few inspirations of pure air.

Dr. MCCONNELL found the paper and charts very instructive. He himself had been accustomed to use a mixture of chloroform and ether in the proportion of two to one respectively. To a certain extent he was prepared to admit that these results were brought about by the use of the Clover's inhaler; but still he thought a careful anæsthetist, who watched closely the pulse and respiration, might perform good and safe work with the ordinary cone. He would like to ask Dr. Campbell if he had made any attempt to ascertain why the respirations increased under an excess of the drug. Is it because of some change in the blood, or is it through some local effect upon the respiratory mucous membrane? He saw an article some time ago

where it was stated that nitrogen produced almost exactly the same results as ether. If so, it must have been rather through the deprivation of oxygen than any special action of the nitrogen; and was it possible that in the case of the ether also, it was the want of oxygen that produced the increased respiratory action? He thought an investigation of these points would form an interesting study.

Dr. MILLS considered the papers valuable, apart from practical and scientifie, as showing evidence of concerted work, which he considered only too rarely practised. It was not always the most curious case which was the most valuable; and it was only from the consideration of a great number of cases that any general laws could be based. Another advantage to be derived from the joining together of workers, is that men supplement each other's weaknesses; one man may be strong in compiling statistics. another man strong in making deductions, and in this way the combination produces greater results than could be accomplished by each individual acting separately. He would like to go into more fully than the present occasion allows, how Dr. Campbell's work brings out the question of reflexes. People sometimes sneer at the idea of reflexes, but he, for his part, believed that the extent to which reflexes have been so far used to explain the phenomena of the higher animals, is altogether inadequate.

Dr. GORDON CAMPBELL, in reply to Dr. Gurd, who advocated only using the bag when the patient moved, said the patient never ought to be allowed to move, if he did so it was a sure sign he was only partially anæsthetised.

In reply to Dr. Evans' question as to the tenseness of the abdominal muscles, he said the subject was too large to go into all the phenomena connected with anæsthesia in one evening. This abdominal tenseness generally occurred at the beginning of the administration, and he believed the manner of giving the ether had something to do with it. If one commences by giving the ether in a large dose, one gets a certain amount of spasm of the larynx which tends

to spread over the whole body, and unless the amount given is diminished, is kept up. Stopping the administration for a little while allows it to pass off and on commencing again with a weaker dose it does not recur.

Stated Meeting, November 2nd, 1894.

G. P. GIRDWOOD, M.D., PRESIDENT, IN THE CHAIR.

A Case of Goring by an Ox with Wound of Bowel.

Dr. SHEPHERD exhibited a patient who had been severely gored by an ox and the intestine and mesentery wounded. The patient, a French-Canadian aged 63, whilst driving cattle on board one of the steamships on the night of September 25th, 1894, was knocked down and severely gored by one of them. He was immediately brought to the Montreal General Hospital and Dr. Shepherd was summoned. On arrival he found the man suffering considerably from shock; the right testicle was exposed and a large wound on the left side of the abdomen, extended from the spine of the pubis upward and outward several inches; through this wound protruded some ten to twelve feet of bleeding small intestine covered with dirt. The intestine was washed and then examined. It was found that the mesentery was perforated and torn in eight or nine places, and on disturbing the clots the vessels bled profusely. These were secured and the mesentery brought together with Lembert's sutures. The intestine was torn completely through in only one place, but in several other spots the outer and middle coats were torn and the mucous membrane extruded. After securing the injured parts with a continuous Lembert the bowel was pulled out for several feet and found normal and then the whole was returned into the abdomen. The abdominal walls were now attended to, and it was found that the wound in the muscles was of greater extent than that in the skin, which had evidently been considerably stretched—to suture the torn muscles the wound had to be extended upwards and

outwards The different structures were sutured separately, the peritoneum with catgut and the skin with horse hair.

The wound in the peritoneum was most internal, a little more external was the wound in the muscles and more external still the skin wound ; so, in this way, as each structure was brought together the level of the sutures was different. Although a considerable portion of the scrotum was torn completely off, yet sufficient skin remained to cover the testicles. A drainage tube was introduced into the peritoneal cavity and the wound dressed with gauze and absorbent cotton.

The patient went on well and never had a bad symptom The drainage tube was removed on the second day. The only untoward symptom that ensued was some sloughing of the wound made by the horn ; this was no doubt due to over-stretching. The man was in excellent condition and had not the slightest tendency to hernia. The skin wound was not completely healed owing to the sloughing which had occurred, but the deeper parts were quite solid.

A Case of Medico-Legal Intere .

Dr. J. A. SPRINGLE showed the genital organs of two little girls, 12 and 14 years of age, who had been violated and murdered four years before.

Polydactylis .

Dr. J. CHALMERS CAMERON exhibited two children of the same family showing this condition.

First child, four days old.

Hands—Supernumerary fingers on each hand springing from the outer border of the little finger. Both thumbs broad.

Feet—Supernumerary great toe on each foot and a supernumerary little toe on the left foot. A web exists between the first, second and third toe of each foot.

Second child, 1 year and 9 months old.

Hands had supernumerary little fingers, which were amputated soon after birth.

Right Thumb very broad, with a distinct furrow down the centre.

On *Left hand* a double thumb.

Feet similar to those of the other child, except the web extended up almost to the end of the toes. On the left foot are seven toes ; on the right six toes.

The father of these children presented the following peculiarities :

Right hand—Broad thumb, double the normal breadth ; nail depressed in centre, but depression did not extend down the thumb below nail.

Between thumb and index finger is a web extending as high as the web of the other fingers.

A sixth finger projecting from the little finger.

Left hand—Same as right, except that there was a web running between first, second and third fingers as high as the joint between first and second phalanx.

Dr. SHEPHERD remarked that the subject of polydactylism was a very complicated one. The occurrence of supernumerary digits may be explained by two theories. (1.) That it is due to reversion or atavism. (2.) Reduplication or repetition owing to excess of germative material (Blastogenic). By the latter theory, the occurrence of more than seven digits is explained, and the doubling of the bones and muscles of the extremities. The theory of reversion is applicable to those cases of supernumerary digits occurring either on the inner or outer side of the manus or pes. Anatomists of late have been much interested in the theory advocated by Prof. Bardeleben, viz., that the pentadactyle extremity has been preceded by a hepta-dactyle form, that is, that the present five digit limbs were preceded by those carrying seven digits, and that the suppressed digits were, one in succession to the 5th the post-minimus, and one in succession to the 1st, the pre-pollex. This would explain the occurrence of these marginal structures, such as the pisiform bone and the radial sesamoid of animals, and also the occasional re-appearance of certain

marginal muscles in rudimentary form. Supernumerary digits are very common in cats and pigs; in pigs the supernumerary digits are only found in the fore limbs, whilst in all other animals they are found in both fore and hind limbs. The horse occasionally has supernumerary digits, and the sheep much more rarely. The condition is markedly hereditary as evidenced by the cases before the society. In conclusion, Dr. Shepherd regretted that the subject was too large a one to permit him to go into it at sufficient length to make it intelligible to the members.

Dr. GIRDWOOD mentioned instances in cats of the reduplication of parts. He had a cat possessed of an extra finger, both in the fore and hind leg, and the progeny of this cat was likewise endowed.

Dr PROUDFOOT had a cat with four well marked ears, out of whose litter of seven, five of the kittens had similar supernumerary ears

Excision of Maxilla.

Dr. ARMSTRONG brought before the members a man whose right maxilla he had excised for sarcoma. The whole maxilla was removed, including the whole or part of the following bones, lachrymal, malar, orbital plate, superior maxilla, palate and ethmoid. The disease was of a very progressive malignant character. It began to grow in December last; the first symptom noticed was pain in the teeth, for which he had some teeth removed without getting relief. Next he was troubled with the tears running down the cheek, evidently denoting the plugging of the lachrymal duct. The third symptom which appeared was the pushing forward of the eye-ball. At this time his teeth were removed under the impression that there might have been some ulceration about the roots to account for the symptoms, but without result. The antrum of Highmore was next explored in the hope of finding pus, but with like success. The swelling continued, as also the pain, to grow worse, and finally the case coming under Dr. Armstrong's notice he diagnosed a sub-periostial sarcoma of

a pretty rapid growth and advised excision. A specimen had been submitted to Dr. Adami for examination and the following report received.

Section shows it to be an endothelioma, *i.e.*, a malignant connective tissue tumour presenting an alveolar arrangement which in parts is with difficulty distinguished from an epitheliomatous growth.

There are, however, no true cell nests, the stroma does not tally with that of a true epithelioma and the cells of the alveoli have a sarcomatous appearance.

The tumour is evidently rapidly growing. When the primary growth occurred could not be determined from the specimen.

Dr. RODDICK enquired concerning the prognosis of Dr. Armstrong's case and agreed with the latter that it was very serious.

Maternal Impressions—Missed Abortion—Monstrosity—(Janiceps).

Dr. GURD exhibited a monstrosity, a fœtus of about the thirteenth week having fusion of two bodies with a single head. It had four arms and four legs, all well formed. No external genitals were visible and the umbilical cord was given off low down between one pair of legs. There was also a comparatively large spina bifida The fœtus was partly mummified owing to its having been retained six weeks after its death.

The mother had all the usual signs and symptoms of pregnancy for three months, when these suddenly left her, and she then had all the symptoms of one carrying a dead fœtus. Dr. Gurd said that this case would strengthen the faith of those who believed that strong maternal impressions caused marks and deformities. One afternoon shortly after conception the mother went to Sohmer Park and there witnessed the performance of some acrobats. Their tumblings so affected her that she told her husband she could not look at them. The mother asked if this could in any way have made her lose her baby. She never knew of its being deformed.

Dr. LAPTHORN SMITH thought the term janiceps was not very appropriate in this case, as it ought to denote a double-headed body or double-faced head, instead of which, this specimen had only one head, the doubling being confined to the extremities.

Dr. GURD, in reply, said he recognized the inconsistency of the name with the condition, but he had looked up a number of authorities, and they all agreed in describing it by this term, so, though unsatisfied, he was obliged to follow their example.

Paralysis in Children.

Dr. MACPHAIL read a paper on this subject. (See page 417.)

Dr. JAMES STEWART, on being asked by the President to give his opinion on the nature of the disease described in Dr. Macphail's paper, said it was very difficult to express an opinion as to the pathology of such a very curious epidemic, without giving the subject more thought than could be expended in the course of listening to the paper being read. He, however, considering that the chief symptoms appeared to be mainly of a paralytic nature, suggested the possibility of the dissase being really a peripheral neuritis. This disease sometimes occurred epidemically, and was especially likely to do so in malarial districts. In the East Indies, for instance, many cases of peripheral neuritis are attributed to the direct effect of the plasmodium. In Dublin at present they are suffering from an epidemic of a paralytic nature, which is nothing more than a marked peripheral neuritis. In this connection, he would like to ask Dr. Macphail, whether or not any examination of the blood had been made, as in cases of neuritis, such as he had referred to, micro-organisms were invariably found, and were capable of reproducing the disease when injected into other animals.

Dr. MACPHAIL, in reply to Dr. Stewart, said the blood had been examined in many instances, but always with negative results. He had attended four cases which ended

fatally, but he could not secure a post-mortem. Several New York physicians were also on the ground and had carried on some investigations of the disease, which he had no doubt would subsequently be given to the profession; but so far as he could learn no definite data as to the pathological nature of the trouble had been obtained.

Dr. McCONNELL inquired from Dr. Macphail whether atrophy of the muscles followed the paralysis, and was answered, "Yes, in every case." He then commented on the nature of the disease, and remarked that it seemed to be an epidemic of a local variety, and was probably caused by some micro-organism. He did not agree with Dr. Stewart in regarding it as a peripheral neuritis, but was more inclined to look upon it as a toxic affection of the spinal cord, confined to the anterior horns, probably an anterior poliomyelitis with involvement, in some cases of the cranial motor nuclei. The symptoms here seemed to be confined to the motor functions altogether and were mostly sudden in their onset, whereas were it a neuritis, one would expect some sensory troubles such as pain, tingling, hyperæsthesia or anæsthesia, and the paresis or paralysis coming on gradually.

Dr. MILLS thought Dr. MacPhail had here compiled a great deal of valuable material, and presented it in a form to be grasped by all. He hoped this line of work would be encouraged, and the custom of collecting a large number of cases of some disease be continued.

Case of Primary Carcinoma of the Liver.

Dr. MARTIN read for Dr. Adami the report on this case. (See page 401.)

Primary Carcinoma of the Kidney.

Dr. MARTIN then exhibited a specimen which had been removed from a private case of Dr. McCarthy's, who, with Dr. Finley, in consultation, had diagnosed primary carcinoma of the kidney. The autopsy confirmed this diagnosis. The kidney shown appeared enlarged, the

capsule, Dr. Martin declared, was in some parts stripped off with difficulty, and on section a large cancerous tumour was seen infiltrating the medullary portion, filling the pelvis, and extending to the suprarenals. Thrombi were found in the renal vein, although the vena cava was free.

Dr. A. LAPTHORN SMITH presented the following specimens and related the histories of the cases:

Case 1.—Multilocular Cyst of the Right Ovary.

The tumour measured 24 inches in circumference. The patient, Mrs. L., nullipara, married two years, never pregnant. Abdominal enlargement first noticed sixteen months ago. On examination all the evidences of ovarian cyst were found. Operation was performed on September 4th, the tumour removed without any difficulty, and she made a rapid recovery, returning home twenty-five days afterwards.

Case 2.—Tubal Pregnancy.

Mrs. W., aged 25, married three years, mother of two children, the youngest one year old. Since the birth of her first child she had suffered from repeated attacks of what was probably pelvic peritonitis. Five weeks before coming under his notice she was suddenly seized with a severe pain in her left side and a fainting fit while walking in the street. She began to flow and continued until time of operation. As she had not missed a period she was sure it was not a miscarriage and in a few days was about again. Two weeks later she had another fainting attack, accompanied by sharp cutting pain, and a third one week before he was called to see her in consultation. On examination he found a mass the size of a small orange in Douglas' cul-de-sac and it was exceedingly sensitive to pressure. Tubal pregnancy was at once diagnosed and operation performed on October 20th. In order to make the recovery more satisfactory he dilated and curetted the uterus, sewed up the cervix, and performed ventral fixation after the removal of the appendages. The dates of the various hæmorrhages were beautifully illustrated when

the specimen was first removed by the clots of blood surrounding it. There was rather bright red blood recently escaped, dark and slightly organized clots, and old hard clots more dense and firm. Dr. McConnell had made a microscopical examination and had only been able to find blood-clot, but further search would be made for chorionic villi.

Case 3.—Hæmatoma of the Left Ovary—Chronic Salpingitis.

Mrs. L., aged 25, has been a chronic invalid since the birth of her only child eighteen months ago. On examination deep bilateral laceration of the cervix and on the left side near the uterus a lump about the size of a small orange. After a course of preliminary treatment for reducing congestion of the pelvic organs operation was performed on September 6th. The uterus was dilated and curetted, the laceration carefully repaired and both appendages removed. The peritoneum and fascia were closed with buried silk and a layer of through and through silkworm gut stitches which had been passed previously were tied. The patient made a good recovery. The silk-wofm gut sutures were removed four weeks after operation.

Embryo in Sac.

Dr. HUTCHISON exhibited a specimen of an embryo in its sac, surrounded by the liquor amini. It was of interest, he thought, from its rarity, such a complete picture of the early development of the human species, not being often seen outside of text-book plates. The abdominal opening could be plainly seen and the small points marking the situation of the eyes, etc., etc.

Stated Meeting, November 16th, 1894.

G. P. GIRDWOOD, M.D., PRESIDENT, IN THE CHAIR.

Drs. J. E. Binmore, Felix Cornu, William Burnett and H. M. Duhamel were elected ordinary members.

Diaphragmatic Hernia.

Dr. ADAMI exhibited the specimen and gave the history

of the case, which will appear in the next number of the JOURNAL.

Dr. MILLS remarked that between the years 1878 and 1881 he, then a resident physician in the City Hospital of Hamilton, Ont., reported a case of congenital hernia through the diaphragm in an infant. He did not remember what organs had passed upward through the orifice, nor whether there were any other Canadian cases on record.

In reply to questions put by the President, Dr. Adami remarked that this would be considered of the congenital variety; that it would seem to be caused by the non-development of the left crus of the diaphragm; and that the most common position for the rupture or orifice in the diaphragm was the tendinous portion of the left side.

Pus tubes and Hæmatoma in the Same Patient. Pus tubes Removed During an Acute Attack of Peritonitis. Double Hydrosalpinx, Causing Severe Dysmenorrhœa.

Dr. A. LAPTHORN SMITH read the reports of these cases, which will be found on page 429.

Primary Carcinoma of the Kidney.

Dr. J. G. MCCARTHY reported this case, which will appear in the next number of this journal.

Secondary Enchondroma in a Bitch.

Dr. ADAMI eighteen months ago had exhibited before this society the rare condition of an enchondroma of the mammary gland occurring in a bitch. (See this JOURNAL, Sept., 1893, page 209.) The animal, after its removal, kept in very fair condition for some time; but towards the end of February last, a swelling was noticed in the abdominal cavity, which was thought to be of an obstetrical nature. It, however, continued to grow, extending in a rather transverse direction. There was gradually increasing difficulty of locomotion, and about three weeks ago the animal was killed in the laboratory and a post-mortem performed. A hard tumour was found in the abdomen attached to the mesentery; it was not adherent

to any of the abdominal viscera, except a portion of the liver, which was found separated from the rest of that organ. Examination showed it to be an enchondroma, hard at the edges, with bony matter scattered here and there; while the whole central portion was essentially myxomatous. It appeared to be attached to the mesentery and to have started there; but we had then these peculiar relations between the tumour and the liver to explain, and altogether it seemed more reasonable to conclude that the growth commenced in the liver, extended until its weight caused that part of the organ which contained it to break off from the rest, and then attached itself to the mesentery. The tumour weighed ten pounds, while the animal in health did not weigh more than twenty pounds, and probably something less than that at the time of the autopsy, as it was much wasted. In addition to this large mass, other secondary growths were seen in the form of cartilaginous nodules in various portions of the lungs, pancreas, abdominal glands and kidney. Dr. Adami regarded the case and specimen as interesting, first, because the condition of primary enchondroma of the mammary gland is a very rare one; secondly, because, in spite of the usual benign character, in this case it had been followed by secondary growths.

Dr. MILLS' experience of tumours in dogs led him to believe that any kind of a growth occurring in the mammary glands of dogs, is apt to be followed by secondary growths. He had had quite a number of these tumours examined microscopically, and then, in spite of their benign gross appearance, sarcomatous tissue was pretty generally found in them.

The Late Dr. E. A. McGannon.

The following resolution was moved by Dr. J. ALEX. HUTCHISON, seconded by Dr. J. J. GARDNER,

Resolved,—That this Society learns with feelings of sincere sorrow of the death, at the early age of 41 years, of Dr. Edward Aaron McGannon, of Brockville, Ontario.

A member of this society since 1889, he attended its meetings, contributing papers and entering into the discussions.

He was one of the few members residing at a distance from the city who took an active interest in its deliberations.

His genial disposition and kindly manner made him the friend of all.

Selections.

Reminiscences of Medical Student Life Fifty Years Ago—Spinning yarns before the camp fire and in the home circle, it had often been said to me, "Well, if you could only write your stories as well as you tell them they would be rather amusing." But I was not then to be seduced into such an adventure. Now, however, that I am an invalid and have passed the "regulation allowance" of three score years and ten, the time drags so wearily along that I have listened to the suggestion of a friend—"Why don't you write a story and send it to one of the magazines?" So here I begin with a series of short stories, which, in reality, are not stories at all, but emphatically true—in every word and incident related.

When quite a youngster I was indentured before a notary public to Doctor James D——s, a very eminent surgeon in the ancient city of Quebec. There being no medical school in the Province at the time, this was the usual custom.

The doctor lived on Mountain Hill, in a house now used as a hotel. It was built when the country was under the dominion of France, and a remarkable house it was—and probably is to this day. It was built on the slope of a steep and tortuous hill, and built apparently to last forever. The foundations had been laid at the foot of the slope, on Notre Dame street, near the site of the historic Church of Notre Dame des Victoires, and the building was carried up so as to have two stories on Notre Dame street and two and a basement on Mountain Hill; the house thus fronting on two streets, each having its distinct and separate entrance, one shut off completely from the other.

The first story on Notre Dame street consisted of warehouses and wine vaults; the second was a private residence.

The Mountain Hill side, on the contrary, was not *in trade*, it was strictly *professional*. Passing through its large drawing-

room you saw a splendid circular staircase which led to a glass-covered cupola and out on a leaded roof, giving a promenade the full length and breadth of the building, and commanding a glorious view of the Citadel above, the St. Lawrence and St. Charles rivers below, the beautiful Island of Orleans, the Falls of Montmorenci, and the distant Laurentian Mountains, with the lovely slopes of the Beauport shores, from Ancien Lorette to Ange Gardien. Such a magnificent view to be once seen is to be always remembered. At the foot of this circular stairway stood a huge stuffed moose, with immense horns, a trophy of the doctor's skill as a hunter, and nearly every celebrity of the day who visited Quebec called and asked permission to see the moose: Admiral Sir George Cockburn—it was he to whom was intrusted the charge of conveying Napoleon to St. Helena—Charles Dickens, the Marquis of Waterford, Lord Charles Wellesley, Lord Powerscourt, Count D'Orsay, Sir James Macdonnell, the hero of Huguemont, and others too numerous to mention. But all have now gone to the "Spirit Land." Where the moose is I do not know.

This stairway was used only in summer, when the family and their visitors wished to enjoy the grand view from the roof promenade, and it was always a matter of surprise why the dwellers in Notre Dame street should have been denied this great privilege. But it was reserved for one of the ghosts of my story to discover that it had not been always *thus*. In fact, a very narrow private stairway had been made for their benefit, but, this being objected to by the "upper crust," it was closed up, and in time its very existence was completely forgotten.

Before my time the basement referred to had been used as a dissecting room, but that had been moved to the attic and the dissecting room converted into a kitchen. Just for the sake of pleasant associations! The presiding genius of the kitchen—old Kitty—was Irish, a strict Protestant, but, when in extreme peril, not above crossing herself and appealing to all the saints in the calendar. She slept in a cupboard-bed in the kitchen, knew what this room had formerly been, and was prepared accordingly—every mouse to her was a ghost in disguise.

"Why, then, Master Edward," she would say, "not a night of me life that they don't come and sit across me legs and dance on me chest, and then lift me up—bed and all—up—up—until, my jewel, I think they are going to shut me up intirely, when I wakes wid a scream, and comes down wid a jump. Not for worlds—no—not for me weight in goold would I stay in this house another day, but for the Missus, the darlin'!"

"Now, but Kitty, what did you have for supper?"

"What did I have for supper, is it? Just a glass of beer and a bit of bread and cheese; sorra thing else."

"Well, Kitty, don't you think it might have been the cheese?"

"Arrah, then, honey, don't you think I am old enough to know the differ between *them* and cheese? The craythurs, they'd never harm one any way—God be good to them—but they've been cut up in this room, and they likes to come back to it."

I do not wish it to be suspected for one moment that my familiarity with Kitty is any proof that I had a "mash" on her. It used to be said in Ireland, and perhaps elsewhere, "Whatever you do, keep good friends with the cook." Kitty was an old maid—she could not help that—under proper facilities she might have been a grandmother; she was old enough! But she came from the *dear owld sod*, not far from where I was born, and it was pleasant to hear her talk of owld Ireland, and its fairies, and its churches, and round towers, and blarney stones, and how St. Patrick banished the snakes from the island and drove them all into the *say!*

The family spent the summer in the country. So Kitty and I had the house to ourselves a great part of the time. I am afraid that, in spite of my friendship for Kitty, she saw a great many ghosts in those days, but she was very forgiving and thought it was all done for her own good.

A day of retribution, however, came at last. That kind of thing is sure to come, sooner or later, upon the wicked. I saw a ghost myself, and in that very kitchen.

Smoking was a luxury to be indulged in cautiously in that

house. Lucifer and Congreve matches and phosphorus bottles were unknown. Only the old tinder box, with its flint and steel, could, in the absence of a fire or a lighted candle, be relied upon to light a cigar.

One Sunday evening, knowing to a certainty that I was alone in the house, I went down to the kitchen for a light. A man sat on a chair in front of the coal-stove, his feet on its hearth, his elbows on his knees and his face on his open palms. I had firmly believed the man-servant to be out, but there sat some one. I passed behind him, and coming to his left side stooped down to open the stove door. He did not move—not one foot. So I said in my blandest tones, looking up at the same time, "Will you have the goodness to move your foot? I want to open the door." If I had had my hat on I would have taken it off, I was so awfully civil. No, he never moved. I repeated my request, without result. So, losing patience, I pushed the the door open forcibly. It opened back to its hinges, but the feet never moved. *The stove door went "right straight through them!"*

I stood up quietly, with my eyes fixed steadily on the figure. I had always heard that that was the correct thing to do when attacked by a lion! I had seen it recommended in books of Eastern travel. I had never travelled myself much, nor was I ever attacked by a lion, but this man never moved—he was worse than a lion, and I might be annihilated at any moment. Oh! for a word from old Kitty. She would have prayed to the saints for me. I had to act for myself, and I acted quietly—oh, so quietly. I feared to disturb that "questionable shape." I retired backwards with my face to the foe, until I reached the foot of the stairs, and then! *then* I took about eighteen steps in three bounds! Never before was such "time" made on that stairway.

This was the first *ghost*—I may as well call it by that name as by any other—I had ever seen. I had not been eating cheese, and I had not then ever tasted beer. I firmly believe to this day that I saw what I have described and as I have described it, "and further deponent saith not."

If tobacco had never been discovered, or if parlor matches had been introduced, and I had not been obliged to go to the kitchen for a light, would that "poor ghost" have been there?

***

Years afterwards, I saw another shadowy form, which I may as well get off my hands while I am about it. It was not in Quebec, but where I am living at present. Driving out professionally one summer evening, just before dark, as I was coming to a bridge over a tiny streamlet I saw in front of me, not twenty yards off, a man in a nut-brown suit, with a pack on his back. He was in the middle of the road, and walked as if fatigued, so I said mentally, "Poor old fellow, I must give you a lift." At the moment I had to attend to the bridge, which was narrow and had no railing; when I looked up the man was gone. It had been raining slightly—but there were no fresh footmarks to be seen, no stone or hillock or tree behind which a man could hide. I got out of my trap and looked everywhere. *No peddlar! no pack!* Months afterwards I was passing that spot again, having with me a man I picked up and whom I had known for years. As we neared the bridge he said, "*That is the spot where the man is seen.*" "What man?" "Oh, did you never hear of him; he has been seen off and on for years—dressed in a brown suit, with a pack on his back. He has never been seen but for a moment at a time." I verified this statement afterwards, and declare most positively that I had never spoken of the circumstances to any one. It was said that years before, a peddlar, or backwoodsman, going out to one of the lumbering shanties, had been murdered in the neighborhood, but nothing definite was ever known.

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For a couple of years the united wisdom of the medical faculty on Mountain Hill was devoted to the case of Paddy Quin. As his name implies, he was by birth an Irishman—by occupation a stevedore, and he was the unfortunate proprietor of a pair of very poor legs. During the summer months he was at work loading ships engaged in the timber trade, and if there was a big stick or a sharp-edged "*deal*" "convaynient," Paddy was

sure to rub his shins against it ; and this being repeated day by day, by the time the summer was ended and Paddy's occupation gone he was ready to spend the winter and his earnings in " undergoing repairs." Poor Paddy—as simple and good-hearted an Irishman as ever lived—he was passed along from one student to another, and one and all gave him up—or rather his legs—as a bad job, until at last he was handed over to me. I strapped and bandaged—applied lotions and ointment to those unfortunate legs, in the most orthodox manner—for a whole winter without result—that is, without any good result. One day he was better, another worse. What between my want of success, and the " chaff" of the other sawbones, I was of all men most miserable ; but Paddy, if not proud of my skill, admired my perseverance and always had a word of encouragement. " Well, may the Lord love you anyway ; you are willing to try—and do what you can—but what am I to do next summer when the shippen be's comin' in ? "

I lost sight of Paddy for a while, and when he turned up he had a line of treatment to propose which was emphatically new and striking—in fact tragic. An old woman from Ireland had told him of a remedy, and " would I help him to try it ? " " Of course I would do anything in the world for you, and you know it, Paddy." " Indade I do, sir, but I don't like to tell you what it is." After a good deal of persuasion it came out that his countrywoman had suggested the passing of a dead hand over the sores on his legs ; it had cured lots of people in Ireland. " Well," said I, " sure that is easily done." " Arrah, then, how and where am I to get a dead hand ? " " Oh, Paddy, we have lots of them in the house this minute. What kind of one would you like ? " " Faith, then, and sorra one of me knows, but she said a black naygur's, if it could be got, would be the best." " By George," said I, " you are up to your knees in clover, Paddy. We have a most excellent nigger upstair this moment." " Glory be to God ! I heard you had such things in the house, but I was afeared to spake of it, for fear you'd think I'd tell." " Don't say that again, Paddy ; I'd trust you with my life ; only tell me what you want to do, and I'll do it.

What was to be done was to be done at the silent hour of midnight—the moon to be at the full—and none to be present but himself.

The following night would do, so it was arranged that he would be on hand at 11.30. In the meantime I would get everything ready.

The scene of operations was to be the new dissecting room. This was in the attic, down the centre of which ran a long, narrow, dark passage. On one side was a rubbish room, on the other a line of small rooms originally intended as bed rooms for the servants. The doors had been made and stood on end, unhinged, against this partition—in this narrow passage—and here the passage abruptly ended in a door, the door of the dissecting room. This room had one large dormer window, fronting on the River St. Lawrence, and as the moon came up over the water its light "slept" brightly and beautifully on the poor "subject's" face; the table was wheeled up so that not one beam of light was lost Elephants' and lions' and tigers' and crocodiles' skulls lay on the floor; men's, women's and children's heads—*galore*—were ranged on shelves round the room; skeletons of men and animals, down to Bandicoot rats, were there; "dried preparations," too, abounded; arms and legs, and a few at full length, were in "review order" standing at "attention" round the room. It was a lovely sight, but one had to get accustomed to it—to be comfortable, particularly at midnight.

Paddy Quin was sharp on time, but as I had a few touches to give to the room at the last moment, I asked him to sit down a minute and rest himself. He had a raw potato in his hand, and as I left the room he said pleasantly, "Well, I'll cut this up while you are away—just to amuse myself."

With a stick of phosphorus I made a few artistic touches in the orbits, along the lines of the ribs of the skeleton, and on the walls, until the whole room presented a brilliant phophorescent display. Then I led Paddy Quin up, but I must confess that I did so in fear and trembling; I might be carrying the thing too far. It was cruel, I confess it, but I was young, and always

rather too fond of a lark; but I poured balm into Paddy's ears as I took him up, and vowed I would stick to him through thick and thin—like a brother!

When the door was opened and Paddy looked in, he gave a jump back and cried out in dismay, "Holy mother, I can't do it." But I said: "I'll go in before you, to show you there is no danger. Don't look round; don't mind what you see at all —you want your legs cured?" "Arrah," says he, "it's aisy for ye to talk, so it is." "Well, Paddy, it's getting on the edge of twelve; if you are going to do it, do it; if not, let us go." "Ah well, be aisy—be aisy a minute." Then he added: "You are not to look in, and I am not to have a candle; lave me to meself, but for the love of heaven don't stir out of this. If I want you I'll call." He then walked in with a courage equal to facing a masked battery.

I had a little peep-hole all ready, and this is what I saw.

The brave fellow walked up in fear and trembling to the side of the table; he put his right foot on a low stool beside it, bared his leg, and then—*then* came the tug of war; but Paddy was equal to it; he took the right hand of the "subject" and passed it slowly down over the bared leg; when this was done he knelt down, crossed himself, said a "Pater Noster" and "Ave Marie," *and then* placed a small square of raw potato on the table beside the body. This he did nine times—each time *keeping tally* with *a piece of potato.*

Then he came to the door and said in a dry whisper: "LET ME OUT!"

As I look back upon that night, I regard that act of Paddy Quin's as one of the grandest religious ceremonies I ever witnessed, grand in its simplicity and trusting faith. Many a soldier who had fought in the great battles of the world would not have entered that room, at that time?

I did not meet Quin again for two years. I had been in Edinburgh, and on my return he was one of the first persons I met. "Well, I am glad to see you, and how are the legs?" "By St. Patrick, sir, you did me a good job that time; they have never troubled me since that night—Glory be to God!"

Next in order I must relate poor old Kitty's adventure with her own particular ghost, and how its appearance led to the discovery of the dark staircase that had been so long shut up as to be forgotten.

When describing the rooms in the attic, I should have stated that one small room—the first one—was finished ; it had a door, and a lock and key, and was the store-room of the house, and a very inconvenient one too. If Kitty wanted a " drawing of tay" she had to go up two pairs of stairs, to this store-room, which was at the entrance to the dark passage ; she knew what was at the other end ! This passage was always dark, dark at midday, and she was most careful to get her supplies in the daytime.

One Sunday evening, however, she was obliged to go up for something ; it was between the two lights—and as she was putting the key in the lock, a woman in white walked up out of the darkness. Kitty had a lighted candle in her hand ; a lighted candle is by common consent admitted to be a protection to a certain extent against uncanny visitants. But the moment she saw the woman she dropped her candle. The woman smiled at her, and said, " Who lives here ?" Kitty, thinking it wisdom in the face of the enemy to be civil, replied, " Doctor D——s." " Oh," said the woman in white, " *and what is in that room at the end of the passage?*"

This was coming to close quarters ; it was, in fact, in legal phrase, a leading question, too leading for Kitty, so she ran down stairs screaming, and when she got to the bottom she gave way to the most bitter lamentations. She would " not stay in the house another night, just as if a dacent woman could not go about her business without being molested in that way. It was only natural that the poor craythurs would be allowed to go back to their quiet graves—to sleep in pace—and not be mayandering round the world to try and find where they belonged."

It certainly was very extraordinary where that female had come from. It seemed utterly impossible that any living being could find his or her way into that passage. The only

possible entrance seemed to be by the big front door, or down the chimney and out through an eight-inch stove-pipe hole! The Doctor came in at 9 o'clock and joined in the chase.

It is not very pleasant to know that the sanctity of home can be invaded mysteriously by a woman—even in white. If by a woman, why not by a man—why not by burglars?

A careful search was made at once, at which every one in the house assisted.

> "In the highest, the lowest, the loneliest spot,
> We sought for her wildly, but found her not."

At length our efforts were rewarded, and the mystery solved. Four unfinished doors and some loose boards stood on end against the partition in the passage; on removing these we found another door, exactly parallel with the door of the dissecting-room, and which this lumber had hidden. A panel had been recently removed from this door, and in the dust on the floor were plainly to be seen the marks of fresh footprints. As the door was fastened from our side with screws, it was soon taken down, and the footsteps followed. Such a pile of dust, such curtains of cobwebs, and such a musty, sickening smell! But down we went in Indian file—the stair was too narrow to admit of any other line of march—until at last we heard voices, and saw a light through a keyhole. The doctor knocked and a woman within said, "Oh, missus, don't let them in; its me they're afther." But the missus opened the door and the mystery was explained. While the family were out in the afternoon, the servant girl, being of an inquiring turn of mind, determined to open a door in a deserted corner and see what was beyond. "No sooner said than done." She had her reward in a stairway full of dust and cobwebs. Up she went until something barred the way. She had no light, but groping about carefully she loosened and removed a panel, squeezed herself through, and was rewarded by coming out in the dark passage above, close to the dissecting room door. Looking through the keyhole made her wish to "inquire within," but at that moment Kitty came up to the store-room door. She could at the same time gratify her curiosity and establish friendly relations with

the stranger; so accordingly, but with timidity, she diplomatically asked: "Who lives here?" and "What is in that room?" When Kitty screamed and ran away—to give the alarm, as she supposed—she ran away too. "She meant no harm; she was only lonesome, and hoped to be forgiven," and she was. It was a pleasant solution to what promised to be a very great mystery. The doctor had lived for ten years in that house and knew nothing of this dark stairway, and the dwellers in the lower regions were equally ignorant.

The discovery of this dark passage, however, was not without result; for one of the students, hearing of Kitty's adventures, and being blessed, or otherwise, with a most inordinate amount of curiosity, went down one day to see what he could see, and returned with several bottles of very choice wine. After having lost his way, he had suddenly found himself in a large vault, surrounded with shelves loaded with bottles, and he had brought up a few to sample them. The result was so encouraging that for many days he went down and returned with spoils. At last the poor boy came in one day looking rather depressed. Most affectionate inquiries were made as to the cause of his melancholy. That day at dinner he had heard his father say to his head clerk: "John, have you noticed that the famous Port of '96 in the Duponts' vaults has been disappearing mysteriously? Some one is stealing it!"

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There is a general impression that a dissecting room is very dirty and very disagreeable. Of course it may be, but is not necessarily so It cannot, under the best of circumstances, be called "home-like" in appearance, but a "post-mortem" examination for family reasons, or an "autopsy" in the interests of justice, may be infinitely more disagreeable.

When one settles down to the quiet dissection of an arm or leg, or the following-out of the distribution of the branches of blood-vessels or nerves, it is rather pleasant than otherwise, especially, as often happened in those "good old days," when the ladies of the house would bring in their work, sit down for a pleasant chat, and manifest a deep interest in the surround-

ings ; and then it was so pleasant to explain to them all the mysteries that were explainable. And this was more than half a century ago, before the idea of entering the medical profession had ever been contemplated by the coming sovereigns of the universe.—EDWARD WORTHINGTON, M. D., Sherbrooke, P.Q., in the *Canadian Magazine*.

THE

Montreal Medical Journal.

VOL. XXIII. DECEMBER, 1894. No. 6.

THE POST-GRADUATE COURSE.

In our October issue we essayed to urge the advisability of establishing a post graduate course in Montreal, and from what we hear, we are not alone in believing that the time has come for such an extension of the teaching facilities in connection with our medical schools. It is well, however, before rushing headlong, or advising others to rush headlong into a new departure, of such import and magnitude, to discuss the subject from all sides. Regarding, then, the project from the side of the clinical teachers, and teachers not clinical, in other branches of medicine, it does at first sight appear that the development of post-graduate courses would mean the throwing of a large amount of extra work upon a body which, as a whole, is already sufficiently overworked. But on further consideration it may be asked, whether this would really and necessarily be the case. In Berlin, Vienna and the other large cities where such post-graduate courses have been established, it would not appear that the university professors find that the post-graduate courses are too great a strain upon them. And studying the way in which affairs are managed in these large centres, we find that practically a very slight amount of extra work is thrown upon the heads of the various departments. The various clinical professors, it is true, give clinics to the members of the post-graduate course, but these are, after all, but their ordinary clinics,

the same as those given to the undergraduate students. And the real bulk of the work in the way of practical classes in various special branches of medicine, in the use of instruments and in bacteriological and pathological courses, falls upon the junior members of the staff. It is they who give the special courses. This arrangement, it strikes us, is mutually beneficial. These junior members of the staff have willy-nilly a considerable amount of time on their hands—more time as a body, that is to say, than have their seniors ; and the members of the post-graduate courses have thus more attention given to them, while, on the other hand, these junior members of the staff gain the invaluable benefit of more teaching, and of teaching a class of those thoroughly eager and anxious to learn. Altogether, then, it seems to us that there would, in this respect, be no reasonable cause why post-graduate courses should not be started here in Montreal, once it is understood that the bulk of the work need not necessarily fall upon the heads of the profession, need, in the main, only be under the direction of the senior teachers.

MONTREAL GENERAL HOSPITAL TRAINING SCHOOL FOR NURSES.

This training school has now been in existence for four years and already seventy-two graduates have completed the two years course, passed the examinations and obtained the medal and diploma awarded to successful candidates. The sixth class of graduates passed their final examination last month and received their medals and diplomas.

The following are the successful candidates in order of merit: Misses Boyce, Hersey, Thompson, Bowen, Barnes, M. Bickle, Smith, Booth, Lounds and Moses.

The hospital prize for bandaging and the surgeon's prize for the best written and oral examination in surgery were awarded to Nurse Boyce.

The final examinations are held semi-annually, in April and October, and the nurses are graduated twice yearly.

The number of nurses in training in the school is about sixty. The course is of two years duration and during that time the nurse is required to pass three examinations, the course being divided into three terms of eight months each. The first two examinations are held by the Medical Superintendent and the Lady Superintendent, while the final examination is conducted by two members of the Medical Board, a physician and a surgeon, each examining in his own department.

Before a nurse is received into the school she must serve a probationary period not exceeding two months, then, if accepted, she becomes a junior, and if successful in passing her examinations she becomes in turn a senior and finally a head nurse.

The instruction consists principally of work in the ward under the supervision of the Lady Superintendent and her assistants, the head nurse of the ward being held responsible for the way in which the assistant nurses perform their duties. Classes are held regularly by the Lady Superintendent for the nurses, and during the winter months lectures are given by members of the attending staff on various subjects.

Such is a brief outline of the methods pursued in the school—methods which have been followed by such signal success, both in raising the standard of nursing in the hospital and also in providing capable nurses for private work outside.

Obituary.

DR. E. A. McGANNON.

We deeply regret to chronicle the untimely death of Dr. E. A. McGannon of Brockville.

For several years Dr. McGannon has occupied a very prominent position in Central Canada. Although having to practice as a general practitioner, his work as a surgeon was extensive and of a high order.

He graduated in medicine in McGill University in 1881, and after acting as a surgeon on some of the Canadian trans-atlantic liners, he settled down to practice in Lowell, Mass.

In 1885 he removed to Brockville, where he rapidly built up an extensive and lucrative practice. He was Grand Trunk surgeon at Brockville, and last year he was appointed Vice-President of the Association for Railway Surgeons of North America.

In 1892, Dr. McGannon married Miss Walsh, a daughter of Major Walsh.

Through the death of Dr. McGannon the profession loses a valuable member, the public a worthy and highly esteemed citizen.

THE MONTREAL MEDICAL JOURNAL,

A MONTHLY JOURNAL OF MEDICINE AND SURGERY.

Communications are invited on subjects of interest to the Medical profession, whether in the form of original articles, addresses, case reports or correspondence. Those desiring reprints must state so on the manuscript.

All communications to be addressed to

ROBT. C. KIRKPATRICK, M.D.,
163 Mansfield Street, Montreal.

Subscription price, including postage, $2.00 per annum, in advance. Single copies, 25c.

The volume commences with the July number, but subscriptions may begin at any time.

Address

THE MONTREAL MEDICAL JOURNAL CO.,
Care of GAZETTE PRINTING CO.,
MONTREAL

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXIII. JANUARY, 1895. No. 7.

Original Communications.

END TO END ANASTOMOSIS OF INTESTINES BY MEANS OF THE MURPHY BUTTON.

BY JAMES BELL, M.D.,

Surgeon to the Royal Victoria Hospital; Consulting Surgeon Montreal General Hospital; Professor of Clinical Surgery McGill University.

I am able to report three cases in which I have used the Murphy button to secure end to end union of intestine after resection. In two the results were completely successful and most satisfactory. In one thus made there was non-union, sloughing of the apposed ends of the bowel, escape of contents and death from peritonitis. Two of the three operations were upon the same patient, and it was the second operation upon this patient which proved fatal. I am, therefore, enabled to present specimens showing (1) the union which had resulted from the first operation, as well as (2) the sloughing of the bowel which resulted from the second operation. This case is, moreover, a most interesting and puzzling one from a pathological standpoint, although I wish for the present to direct attention specially to the use of the Murphy button.

The second case was one of femoral hernia, in which 39 hours of strangulation had produced complete gangrene of the extruded loop of bowel. Until very recently such cases were the *bête noir* of the surgeon, and the question,

* Read before the Montreal Medico-Chirurgical Society, November 30th, 1894.

"What shall be done with cases of gangrenous hernia?' has been much discussed. This case and others, now a goodly number, of recoveries after resection of the bowel, indicate the only rational treatment, and it is particularly in this very class of cases, where rapidity of operation is frequently such an important consideration, that artificial aids are, if useful at all, of the greatest service.

CASE I.—J. W. McC., male, æt. 40, had always enjoyed good health until June, 1893, when, while in Chicago attending the World's Fair, he was suddenly seized with severe and painful diarrhœa. The diarrhœa subsided in four or five days, but pain remained, and he felt so badly that he came home and was unable to work for six weeks. His bowels had never been quite regular since this attack. He recovered fairly well, however, until December, 1893, when he had another attack of pain and a hæmorrhage from the bowels. Since that time he had never had a natural movement of the bowels, without a purgative, and he had suffered greatly from wind, which, after rumbling about for some time, finally escaped in an explosive manner, giving great relief. In February, 1894, he was seized with faintness and some hours afterwards passed a large quantity of blood per rectum. A similar attack had occurred once since. On the 14th June, 1893, he was admitted to the Royal Victoria Hospital, with complete obstruction of the bowels of six days standing, and for which he had been given various kinds of purgatives, as well as enemata, but without any effect. His abdomen was greatly distended. The principal distress was referred, vaguely, to the hypogastrium, and bimanual examination, (with a finger in the rectum), discovered an ill-defined mass in the middle line, about midway between the umbilicus and the pubes. This examination gave a good deal of pain and was followed by the passage of a little flatus and soon afterwards by a liquid stool. The symptoms were at once relieved and free evacuation of liquid fæces continued for two or three days. He remained well, with the exception of the wind and constipation, which was relieved from time to time by purga-

tives until the 14th of July, when he was seized with faintness, and became quite pale. This condition lasted all the afternoon, and the patient stated that he knew from his past experiences that he was about to have a hæmorrhage, and within a few hours a large quantity of dark clotted blood was passed per rectum. I now advised operation, to which he readily consented, and on the 19th of July I opened the abdomen in the middle line below the umbilicus and directly over the part at which the mass had been felt, although it had disappeared with the free evacution of the bowels and had not since been discoverable. Two loops of small intestine, each acutely bent upon itself, were found attached to a mass which overhung the brim of the pelvis. These were carefully separated, when it was found that they both communicated with a free cavity, bounded posteriorly by the mass above mentioned, and in which lay a long irregular mass of inspissated fæcal matter. The obstruction was at the upper of the two acutely bent portions of the ileum, and the bowel above this angle was three times as large as it was below it. Over a space of two inches in length, and involving one-third of the circumference of the bowel the wall of the gut was entirely absent. This portion was excised and the ends united by the Murphy button. At the lower attached loop the destruction of the bowel was less, being about one inch in length, and involving a narrow strip along the mesenteric border. These deficiencies in the wall of the bowel were apparently the result of a destructive ulcerative process. It was from this point that the hæmorrhages had occurred, and a small artery, which was ulcerated through, bled very freely. The vessel was ligatured and the opening in the bowel closed by a continuous Lembert suture running obliquely from the mesenteric border to near the free border of the bowel. This, of course, narrowed the lumen of the gut somewhat, and gave me some anxiety as to the possibility of the passage of the button, which, it will be noted, was on the proximal side of this suture. My only alternative, however, was another resection and end to end anastomosis,

and I decided to leave it as it was, as I had still to turn my attention to the mass overhanging the pelvis, and which had been in such intimate relation with the bowel already operated upon. Careful examination of the mass led me to the conclusion that it was simply cicatricial, and that it did not involve any other part of the intestinal canal. The subsequent history shows that I was wrong in the conclusion arrived at, as to the character of the mass, but right as to its not then involving any other portion of the bowel. The patient made an exeellent recovery, and after a week or ten days his bowels moved regularly and he passed large well formed stools (showing that there was then no obstruction in the rectum or sigmoid flexure), but the button never came away. With the exception of some discomfort after an enormous dinner of corned beef and cabbage and several summer apples, he continued well and left the hospital on the 12th of August in first rate condition. (He wrote me the day after leaving the hospital, to say that we had not felt so well for two years.) On the 11th September he returned, again suffering from obstruction. He had enjoyed good health for from one to two weeks after leaving the hospital. Then diarrhœa set in for a few days, after which it was succeeded by constipation and rumbling of wind in the intestines, ending as before in painful and explosive evacuations with temporary relief. This continued until September 18th at 4 p.m., when obstructive symptoms, (inability to pass even flatus, vomiting, &c.), came on. These were attributed by the patient to the arrest and impaction of the button (which had never been found), in some portion of the ileum or large intestine. In this condition he reached the hospital on the night of the 11th of September, and on the following day at 2 p.m., forty-six hours after the onset of the symptoms I reopened the abdomen through the original median incision. The button was found free in the spleenic flexure of the colon and removed through a small incision on its free surface, which was closed by Lembert sutures. I had

previously discovered the obstruction in the lower portion of the sigmoid flexure by passing the button down through the descending colon and attempting to expel it per anum. The site of the previous resection could only be located by the irregularity in the mesentery, and the bowel was of uniform size above and below it. The mass overhanging the brim of the pelvis was apparently smaller and was certainly much more movable than at the previous operation. The site of the obstruction having been located in the lowermost portion of the sigmoid flexure, I proceeded, to remove it, together with the tumour overhanging the brim of the pelvis, with which it was continuous. This was finally accomplished after some difficulty owing to the depth in the pelvis at which the manipulations had to be carried on. The mass, which was dense and hard, surrounded the bowel as a narrow band, (about an inch in width externally), and nearly closed its lumen, leaving only a narrow slit about as large as a waistcoat button hole. It was infiltrating and was evidently either cicatricial tissue or scirrhus cancer. It has since been demonstrated to be the latter. During the operation the bowel was occluded on either side by a piece of hollow rubber tubing. About three inches of the bowel was removed, and the ends united by the largest sized Murphy button. The operation lasted about two hours and was well borne. There was little loss of blood and no fouling of the peritoneal cavity. A glass drainage tube was carried down to the bottom of the pelvis and exhausted from time to time. A small quantity only of odourless fluid—at first blood-stained and afterwards colorless—was all that was withdrawn from the tube for forty-eight hours, during which the patient did typically well in every respect. Several copious evacutions of dark liquid fæces occurred, the first about three hours after the completion of the operation. There was no vomiting, the pulse ran from 88 to 94, and the temperatnre from 98.5° to 99.5°F., and with the exception of the thirst and restlessness usually observed after

severe abdominal operations, he was perfectly comfortable. About 2 p.m., on the 14th, (48 hours after operation) the patient was seized with very severe pain which was not sensibly relieved by a moderate quantity of Lig. opii sed. (Battley) injected hypodermically. The dressing was removed and the glass drainage tube found filled with liquid fæcal matter. From this time he sank rapidly and died in about 18 hours. Post-mortem examination discovered a general peritonitis, with quantities of liquid fæcal matter free in the peritoneal cavity. The button remained in situ, but the approximated ends of the bowel were completely gangrenous in their whole circumference and had given way just beyond the border of the button. I cannot offer any satisfactory explanation of this unfortunate result. Dr. Murphy states, in a letter to me, that " this is an exceptional case and has not occurred so far, except where there was infection from without, preventing the union, and where the post-mortem showed that there was no effort at union at any portion of the circumference, as well as at the point where the perforation occurred. This condition was certainly shown by the post-mortem in this case, but I cannot believe that it was primarily due to infection from without. I cannot believe that with such symptoms as I have narrated in the history of the first forty-eight hours after operation there could have been infection from without. I am much more inclined to attribute it to one of two things, either (1) impairment of the vitality of the ends of the bowel by the use of the elastic ligature; or (2) pressure upon the wall of the bowel between the end of the glass drainage tube externally and the button internally, producing erosion and escape of intestinal contents, and then infection from without. Finally, it is perhaps open to question, whether the vitality of the bowel was not already impaired by its great distension about the stricture, and also whether, considering the thickness of the wall of the bowel in this situation, the button may not have been closed too tightly.

CASE II.—Mrs. M., æt 49; strangulated femoral hernia.

Operation in the Royal Victoria Hospital, October 20th, 1894, at 11 a.m., thirty-nine hours after onset of symptoms. The patient, a stoutly built woman, had always enjoyed good health. About fifteen years ago a hernia first appeared in the right femoral region. It had always been reducible and had never given her much trouble. She had not worn a truss. Symptoms of strangulation came on about 8 o'clock in the evening (October 18th), severe pain, swelling of the mass, which could not be reduced, great tenderness (a specially marked symptom), and frequent vomiting which soon became fæcal in character. On admission these symptoms persisted, but in a modified degree. The pulse was 96 and the temperature 100°F. The abdomen was moderately distended. No attempt was made to reduce the hernia. On making the incision through the skin and fascia, brownish serum exuded from the cellular tissue having a strongly putrefactive odor, The sac was greatly thickened, dark, œdematous and friable, and contained a couple of drams of dark blood-stained serum, which also gave off a strong odor of putrefaction. The hernia consisted of about three inches of ileum tightly caught and quite gangrenous. When the opening was enlarged by incision of Gimbernat's ligament and healthy bowel brought down, the gangrenous part lay collapsed and empty, and was almost separated from the healthy gut at both ends where it had been constricted. The bowel was emptied and compressed by the fingers of an assistant, and six and a half inches removed and the ends united by the Murphy button. The mesentery corresponding to this portion had been ligated off at some distance from the bowel through healthy tissue. In spite of the greatest precautions, however, the mesentery stripped itself away from the bowel at either end. There was no great bleeding, but I felt that I could not leave the patient in that condition, for fear of hæmorrhage in the first place, and secondly, for fear of sloughing of the bowel which had been thus deprived of its vascular supply. I therefore continued my incision upwards and outwards through Poupart's ligament and opened the abdominal cavity. I

again resected ; this time five inches, going well within the border of the attached mesentery, united the ends with the Murphy button, ligatured the mesenteric vessels and brought the mesenteric borders together with catgut sutures close up to the bowel. There were thus 11 inches of bowel removed. The hernial sac was excised, and the peritoneal wound closed with mattress sutures of silk. The muscular borders were next closed with buried sutures of silk-worm gut and the pectineal fascia was attached to the re-united Poupart's ligament by three sutures of catgut. Finally the skin was closed by a separate layer of silk-worm gut sutures, and a small tent of iodoform gauze introduced at the lower angle of the wound. Tho operation lasted two hours and was well borne. The patient never had a bad symptom and made an uneventful recovery. A liquid motion, (with flatus), was expelled at the end of twenty-four hours, (after adminstration of an enema). A regular movement occurred again next day, and on the fifth, sixth, ninth and tenth days. The button was found imbedded in a well formed stool, which was passed at 1.30 p.m., October 30th, just ten full days after operation. The wound was perfectly healed and the patient allowed up on the 22nd. Healing per primam.

My experience in these three cases leads me to the conclusion that the Murphy button is a valuable aid in end to end anastomosis of intestine. So many artificial aids have been introduced for this purpose, have had their day and have been discarded, that most surgeons are now sceptical about anything of this kind. It is, of course, not to be assumed that union of intestine cannot be secured without such aids, for it undoubtedly can, but the great desiderata, rapidity of operation and accuracy and security of co-aptation, are both admirably effected by this instrument. I cannot agree with the view which has recently been promulgated, that the Murphy button is useful in the hands of the tyro and is not necessary to the experienced surgeon. The actual union of the intestinal ends is but one part of the operation, even if it be the culminating point,

and the surgeon who is not possessed of the necessary skill to unite the ends of the intestine by suture, is certainly not fitted to undertake any such operation by any method. In my experience the most difficult part of such operations, and the part which most requires surgical skill, is that which is preliminary to the intestinal co-aptation. Again the button may be used, (as in my second operation), deep down in the pelvis where accurate union by suture would be almost impossible.

The great want of intestinal surgery at the present time is a suitable clamp, a clamp which will occlude the lumen of the bowel, without too much pressure upon its delicate walls, and without exercising pressure upon the arterial supply at the mesenteric border. Dr. Murphy's ingenious contrivance to exercise a uniform spring pressure gives, I think, a clue which may be utilized to effect this purpose, —I mean to produce a clamp to be locked like an ordinary artery forceps (Péan), with smooth blades capable of being armed with rubber tubing, and upon a spinal spring which will make the pressure indirect rather than direct uniform and capable of regulation. I know of no clamp at present in use which is not open to serious objection. The use of rubber tubing is, perhaps open to less objection than any other device, but it is not by any means satisfactory. As it surrounds the bowel, the wall must be puckered considerably in order to occlude the canal—especially in the large intestine—hence more pressure is required than should be necessary if applied so as to evenly appose the inner surfaces. It also cuts off the circulation for a time completely, and the proper regulation of the degree of pressure is extremely difficult. If one could always have the ideal assistant, I believe that the best clamp is the thumb and forefinger, but a serious objection to this is, that at best, the assistant's hands are greatly in the way of the operator, and worse still, there is the constant danger that by relaxing or moving his fingers the contents of the bowel may be allowed to escape and prove disastrous to the operation.

REPORT OF A CASE OF PRIMARY CARCINOMA OF KIDNEY.*

By J. G. McCarthy, M.D.,
Demonstrator of Anatomy, McGill University.
AND
C. F. Martin, B.A., M.D.,
Demonstrator of Pathology, McGill University.

The rarity of primary carcinoma of the kidney in the adult, has induced me to give a short resumé of the clinical aspects of a case, of which the specimen has already been brought before the Society.

The patient, a female, aged 42, was married at 23, and has had eleven children, nine of whom are living. She first consulted me at the latter end of August for recurring attacks of pain in the back and loss of strength. The pain was severe and extended on the left side from the lumbar region of the spine to the front of the abdomen, and occasionally was felt down the left thigh. She attributed her ill-health to the after effects of her previous confinement. Notwithstanding the number of her pregnancies, and the ardous duties of a large family in one in poor circumstances, she had always been in good health. Two months previous to the birth of her last child, which occurred on the 3rd November, 1893, she commenced to suffer with attacks of pain in the back, and noticed for the first time that the urine was blood-stained and contained blood clots. Her confinement was normal. She was delivered of a healthy child at full term, and, I am told, went to her work on the morning of the fifth day. Two months later hæmaturia returned, and appeared at intervals in small quantities till June, 1894. The pains continued, and she felt weaker and found it difficult to attend to her household duties. In January she noticed a small growth on

* Read before the Montreal Medico-Chirurgical Society, Nov. 16th, 1894.

the left side of her neck, which gradually increased in size, and had occasionally been the seat of pain. The family history contained nothing of importance.

When first seen she presented a pale, careworn expression, and was somewhat emaciated. The tongue was clean; appetite good; no vomiting; bowels fairly regular, but she had previously suffered from obstinate constipation. The pulse was 115, small and compressible; temperature normal.

In the neck was a growth about the size of an egg, situated in the triangular interval between the sterno-mastoid and the trapezius above and parallel to the clavicle. It was hard and nodular to the feel, and quite mobile. The cephalic vein of that side was dilated, and pursued an unusual course across the front of the chest, over the first intercostal space to the sternum. I looked upon the tumour as most likely a secondary growth, originating in the cervical lymphatic glands There were no signs of disease in the mouth, throat or thorax. The apex of the heart was displaced upwards and outwards to the lower border of the 4th rib in the mammary line. Percussion dulness was made out at the upper border of the 3rd costal cartilage, nearly two inches to the left of the median line, and extended from the apex to nearly across the sternum. There was no distension of the abdomen. Its walls were soft, flaccid, yielding readily to pressure. A portion of the large bowel, distended with fæcal matter could be easily felt beneath the abdominal parietes, extending from the ninth costal cartilage in the mammary line, downwards on the confines of the umbilical and left lumbar regions. Beneath the bowel, which I thought was the descending colon displaced forwards, could be felt a large growth, quite hard, non-fluctuating, with a smooth and rounded contour, having at its inferior border a smooth nodular projection.

The tumour extended upwards into the left hypochondriac region and downwards to the left iliac fossa through the left lumbar region; it inclined forwards towards the umbilicus, receding as it did so from the anterior abdominal

walls. It could be tilted forwards, without occasioning any pain, by pressure behind over the region of the kidney; in other directions it was quite fixed. Percussion dulness extended to the lower border of the 6th rib outside the nipple line and posteriorly over the region of the kidney a slight bulging was noticed.

There was no dilation of the superficial veins, and no œdema of the extremities. The urine was examined on two different occasions. The quantity excreted, though not measured, seemed normal. Nothing could be inferred from the sp. gr. or color. It was acid in reaction and contained neither albumen or sugar; but, when examined microscopically, blood cells were distinctly visible and urates were present in large quantities.

The disease progressed without any apparent signs of hæmaturia. The patient became more emaciated: there was some increase in the size of the tumour, and the exacerbations of pain towards the end became more frequent and more severe. A slight rise of temperature was noticed, on two occasions, to 100° and 100.3°F.

The last two or three weeks were marked by an uncontrollable diarrhœa. The patient now took to her bed, aud from this out, the loss of strength was very rapid, and the emaciation extreme, and she died on the 31st October. Dr. Finlay saw the patient with me at the latter end of her illness, and agreed with the diagnosis.

Remarks.—The invasion of the cervical glands of the left side of the neck, the freedom from disease of the other superficial lymphatic glands, is worthy of note. It was this that gave me the first clue to the possibility of malignant disease. I ordered the patient to bed and made a thorough examination in search of the primary growth. It was only after this was localized that any mention of hæmaturia was made by the patient. In tracing the course of this secondary infection from the primary disease in the kidney, I believe that it was conveyed by the lymphatics of the kidney to the thoracic duct and by this channel to

the lymphatic glands of the left side of the neck. I feel more inclined to this opinion after noting, at the post-mortem, the condition of the retroperitoneal glands in the neighbourhood of the kidney.

Hæmaturia had appeared early; had never been profuse, and for the last five months of the illness, was reduced to a mere trace, which required a microscopical examination to determine.

At the post-mortem the transverse colon was noticed to be uncovered by the great omentum, and extended downwards from the hepatic and splenic flexures to a point below the umbilicus. Although the intestine was at that time quite empty, from the severe diarrhœa that had preceded death, I think now that possibly that portion of the large bowel which could be so distinctly felt in life, was part of the transverse colon from its mid-point below to the splenic flexure, which in its abnormal position ascended almost vertically in front of the tumour.

Another point which I might mention, though I consider it merely as a coincidence, was the acidity of the saliva. It was tested with strips of litmus paper, placed over the orifices of the ducts. I made four tests at intervals of a few days. Three times the reaction was acid, once neutral.

Pathological Report.—The whole growth manifests the ordinary character of a primary medullary carcinoma of the kidney arising from the epithelieum of the renal tubules. It shows in places the true glandular form of carcinoma, first described by Waldages, and indicated clearly, from microscopic specimens, how the tumour cells proliferating from the kidney epithelieum becomes gradually smaller and like atypical cells of this organ, while the stroma of the cancerous mass takes its origin from the intertubular connective tissue.

The progress of the case has likewise been of interest, inasmuch as its advance by the lymphatics is the more unusual form of primary renal carcinomata, but the growth in the neck is undoubtedly to be regarded as secondary to

the kidney affection, metastases having formed through the thoracic duct and by retrogarde advance to the lymphatic glands.

Primary cancers of the kidney do not, as a rule, form secondary growths, and when these occur it is usually by the blood stream. Here the vena cava seemed free, but we are by no means certain as to the condition of the lungs, being unable to examine the thorax for metastases.

Only a partial autopsy was permitted and that of necessity a hasty one. The abdomen was opened, showing a meagre panniculus. The visible coils of intestines were reddened and the transverse colon displaced downwards and to the left. A large mass was found beneath these intestinal loops, occupying the umbilical and left lumbar regions chiefly, and reaching for about one inch to the left of the vertebral column. This was discovered to be the left kidney and adrenal converted into a large tumour, which lay partly twisted on itself, so that the convex border of the kidney lay rather downwards than outwards. The tumour was easily and rapidly removed, in toto, there being no dense attachments to any neighbouring organs, but merely thin, loose adhesions.

During removal it was observed that some of the retroperitoneal and lumbar glands were involved, and that a thrombus partially filled the renal vein. The vena cava was found free as far as could be ascertained. There was not enough time allowed to dissect up the thoracic duct.

The tumour on removal presented a large mass, divided at the junction of its uppermost and second growth into two unequal parts. The greater and lower portion had the usual renal shape, and was surmounted at its upper end by the remaining portion of the tumour which, as it were, fitted like a cap on top of the kidney.

That this was supra-renal was borne out by its position and relation to the kidney, as well as by the fact that the renal capsule could be stripped off between the kidney and the upper mass. To make further certain, there was no

other evidence to be found of adrenal in the neighbourhood.

The adrenal was, however, partly joined to the kidney by several areas of new growth, these being the channels of transmission of the growth from the kidney to the other organ.

On removal the whole mass weighed 1250 gram.

Measurement of the kidney alone was 7½ inches long by 5 inches broad, and 2½ to 3 in thickness.

Adrenal alone measured 4 inches x 3 inches x 1½.

The kidney capsule presented numerous dilated lymphatics filled with granular material and was fairly easily stripped from the organ.

Section into the kidney showed that but little renal tissue remained, the cortex in the upper half being about half its normal thickness and less, and in some places so thin that the contents of the tumour were almost protruding. In the lower portion, however, not only was the cortex about the normal size, but there was further some evidence of medullary pyramids and calices. The hollowed out areas thus left were filled with a large quantity of cheesy looking pultaceous material, composed of fatty cells and free fat globules, granular detritus, chalesterine cells and remains of old hæmorrhages. The pelvis of the kidney and upper part of the ureter were filled with the same mass of degenerated cancerous material, and the renal vein showed the presence of a cancerous thrombus along nearly its whole course.

The adrenal was similarly affected, and its outer covering, which was greatly thickened, formed a kind of capsule to the enclosed mass of detritus, resulting from the retrograde changes and hæmorrhages within of the cancer which had involved this organ in virtue of its contiguity.

Microscopic examination of the remnants of kidney tissue showed masses of columnar and polyhedral small cells of epithelial character, distributed in various portions and situated amid a fibrous stroma. In many places very

little evidence of tubules could be found, the whole renal tissue being overrun bv the neoplasm. Where, however, tubules or glomeruli could be found, it was evident that from here the growth had taken its origin, while the fibrous stroma arose from intertubular connective tissue.

Sections of the involved suprarenal showed the walls densely infiltrated with cancerous tissue, so much so, that there was but little evidence of the original normal adrenal tissue.

Retrospect Department.

RETROSPECT OF PHARMACOLOGY AND THERAPEUTICS.

By A. D. Blackader, M.D.

Professor of Pharmacology and Therapeutics and Lecturer on Diseases of Children, McGill University.

The Treatment of Diphtheria.—(The *Medical Record* November 3, 1894.) By A. Campbell White, M.D.—In this paper the writer gives us the results of his experience in the Willard Parker Hospital with three different modes of local treatment. In the first series, the nasal and throat cavities were thoroughly irrigated every one to three hours with warm salt solution, until the pseudo-membrane had disappeared; then less frequently till the entire disappearance of the bacilli. In the second series, in addition to the above treatment, a spray of peroxide of hydrogen, of varying strength, was also used to the throat and nose every three hours, except during the night. In the third series, a solution of bichloride of mercury was substituted for the salt water solution of the first series. The nasal cavities were irrigated every eight hours with a warmed 1 to 4000 solution, and the throat, every three hours, with a 1 to 3000 solution. Besides this local treatment, nearly all the cases received frequent doses by the mouth of the tincture of the chloride of iron and of alcoholic stimulants. The conclusions arrived at from the results obtained in these cases, together with the investigation and observation of a much larger number of cases, may be stated as follows:

1. Frequent washing of the air passages attacked by diphtheria lessens the duration and amount of diphtheritic membrane.

2. The addition of antiseptics in sufficient strength to be

germicidal to the irrigating fluid is irritating to the mucous membrane, thereby causing extention and persistence of false membrane, rather than the effect desired.

3. The addition of antiseptics to the irrigating fluid is liable to cause systemic poisoning.

4. Spraying the throat (also the pernicious treatment of swabbing the throat) whatever solution is used can have no good effect as the parts reached by the spray, except in the hands of an expert, must necessarily be very limited. In very young children the spray cannot be used at all with advantage.

Frequent cleansing of the throat and nasal cavities with a bland solution, such as plain warm water, or normal salt solution, is easier of application, more agreeable to the patient, and does all that any antiseptic solution can accomplish, either upon the duration of the membrane or the period of the isolation.

A Case of Leucocythæma Apparently Cured by Bone Marrow.—(The *Lancet*, September 22, 1894.) By W. G. Bigger, M.D.—The writer reports a lad, aged 12 years, who, for the previous six years, had been under observation, suffering from splenic enlargement with anæmic symptoms, but who had previously been much relieved with arsenic and iron. Two months ago the disease acquired a more active character. The spleen became much larger, and completely filled the left half of the abdomen, while at the same time there was diarrhœa, pyrexia, and frequent attacks of epistaxis. He was fed on raw bone marrow spread on thin slices of bread. Under this treatment the improvement in the boy's condition after the first week was marvellous. The spleen receded in size, the anæmia rapidly improved. After a month's treatment the boy was reported as being better than ever he was, while the spleen had so far receded as only to be felt about three inches below the ribs.

Oxalic Acid in Combination with Iron and Manganese Peptonates as an Emmenagogue in Chlorosis.—(*Medical*

News, September 29, 1894.) By H. C. Bloom, M.D.—This is a second report by Dr. Bloom on the value of oxalic acid as an emmenagogue. Since his previous paper he has used the drug in upwards of one hundred cases of amenorrhœa, and while it occasionally failed him, his experience still led him to regard it as the surest and safest emmenagogue we have. He thought it also reliable under certain conditions as an oxytocic. In chlorosis, additional therapeutic measures were necessary, looking towards the establishment of a better condition in the blood. Frequently, however, even when the anæmia disappears, the amenorrhœa may persist. In such cases the combination of the ferruginous preparation with oxalic acid has yielded, in his experience, the best results. His formula is as follows :

℞	Ferri peptonat	gr. xii.
	Mangani peptonat	gr. ii.
	Ac. oxalic	gr. ii.
	Alcoholis	ʒ iii.
	Aquæ q. s. ad.	ʒ iv.

Sig. Two drachms three times a day.

The Effect of Creosote on the Virulence of the Tubercle Bacillus.—(*British Medical Journal*, September 22, 1894.) By W. Kington Fyffe, M.D., (Cantab.)—In this paper the writer gives us the results he obtained from an investigation undertaken to decide whether the value of creosote, as a remedy in phthisis, was due to any restraining action exercised over the growth of the bacillus, or simply to its power of improving digestion, and so aiding assimilation, At Victoria Park Hospital creosote is used in one of three ways : (1) As an inhalation ; (2) by the mouth ; (3) by means of the creosote chamber. The latter method consists in placing the patient in a small room, in which creosote is heated till the air is saturated with the vapours. The method adopted by the writer in conducting his investigations, was that recommended by Professor Delepine, namely, that of injecting tuberculous sputum into the leg of a guinea pig, and noting the time it lived, and

the extent of lesion at the time of death. The conclusions he arrived at are summed up as follows :—(1) In those patients who were taking creosote simply as an inhalation, no effect on the virulence of the bacilli was noted. (2) In those to whom the creosote was administered by the mouth, in doses ranging from two to twelve minims three times a day. a slight diminution in virulence was noted when the dose was small, and when large amounts were administered, the diminution was well-marked. (3) In those to whom the creosote was administered by the the third method, the number of cases examined was only three, and, therefore, an absolute dictum could hardly be given, yet the animals lived longer after the injection than in any other instance, and died in the end from cellulitis, set up by the injection.

Apocynum Cannabinum as a Cardio-Kinetic and Diuretic.—(*British Medical Journal*, September 22, 1894.) —This drug, which has been known for some years as an emetic and cathartic, and has been employed as a remedy in dropsy, was examined by Schmiedeberg in 1883, and was found to contain an amorphous substance, apocynin, and a glucoside, apocyneine ; the first soluble in alcohol, not in water ; the second, soluble easily in water. Petteruti and Somma (*Il Policlinco*, Nos. 10—14, May to July, 1894), have experimented with the drug in the form of a decoction and of a tincture. They found that the action of the decoction is exercised chiefly on the stomach and intestines producing first catharsis and then emesis. Should this action be postponed, increased diuresis and acceleration of the heart beat may be noticed. The tincture, however, was found free from gastro-intestinal irritant effects, even when large doses were employed, while distinct cardio-kinetic effects were obtained. Sixty to ninety minims of a tincture, having a strength of 1 in 10, were given daily. Marked diuresis was produced, which was not accompanied by albuminuria. The drug appeared to act as a diuretic without irritating the renal epithelium. Sphygmographic tracings showed a considerable increase

in the force of the pulse, the rapidity of which was sometimes markedly diminished. The change in rapidity was not, however, a constant effect. Irregularity in rhythm was sometimes noted. They considered the tincture as likely to prove useful in valvular lesions of the heart, and especially valuable in cases of œdema and dyspnœa, while it has the advantage over the other cardiac drugs that it does not irritate the primæ viæ and that it may be used without danger for a long time.

Compression of the Common Carotid Arteries for Uræmic Convulsions.—(Lancet, August 25, 1894.) By A. V. Lindesay, M.D.—The writer relates the case of a boy four years of age undergoing treatment for acute nephritis. Uræmic convulsions suddenly supervened, and in spite of the use of ice to the head and of pilocarpin, became general. While at their height he made firm pressure with his fingers, compressing the vessels against the tubercles of the sixth cervical ventebra, and in less than a minute there was a cessation of the convulsions. After gradually relaxing pressure there was no return of the spasms for three or four minutes, and on their return pressure again almost immediately checked them. Six times this was repeated, the period of rest gradually lengthening until, after waiting three-quarters of an hour without any return, the patient was left in charge of his father. He remained in a state of coma, breathing quietly, for eight hours, waking with a start, perfectly conscious. His subsequent progress was very satisfactory.

The Modern Treatment of Pulmonary Phthisis.—(The Lancet, November 3, 1894.) By C. Theodore Williams, M.D.—In reviewing the treatment of phthisis during the past eighty years. the writer emphasizes the fact that whatever success has been obtained, has been achieved by strengthening and fortifying treatment, whether by diet, climate or medicines, and not by so-called specific treatment. All these specific modes ignore the greatest factor of all, the resisting power of the organism to disease, and

it is to this that the physician should lend his aid and support. Life in the pure air, judicious exercise, and a light nourishing dietary, with such aids as cod liver oil and tonics, have effected more than all the forms of bacillicide treatment. The brilliant researches of Metchnikoff have acquainted us with some of the powerful weapons with which nature fights the battle of resistance to such bacillary invaders, and the problem of treatment would appear to resolve itself principally into means to increase the number and activity of the phagocytes. Dr. Williams thinks that experience teaches us that a large quantity of oleaginous food, supplied under conditions which promote its absorption and assimilation, is one of the surest methods of promoting the formation of lymph and of blood rich in phagocytes. He has little faith in the substitutes for cod liver oil, although he has given a fair trial to most of them. The introduction of a large amount of milk into the dietary is to be aimed at. If cows' milk fails, ass' and goats' milk, which are more easily assimilable, should be tried. Mere gain in weight, however, is not of great significance, and is by no means incompatible with progress of the disease; all it signifies is maintenance of appetite and the avoidance of much exertion. A most important factor in treatment is pure air, and on its thorough application to the system of the patient most success depends. He recommends an outdoor life, and that phthisical patients should accustom themselves to open windows throughout the year. The recumbent posture is not the best for expectoration and increases risk of fresh infection; he recommends in preference a position in which the head and shoulders are more or less raised.

In cases of consolidation, or of excavation, with pyrexia, exercise is undesirable, but in cases of limited apical lesions and limited cavities without fever it is desirable for the patient to take as much exercise as his strength will permit.

QUARTERLY RETROSPECT OF GYNÆCOLOGY.

PREPARED BY T. JOHNSON-ALLOWAY, M.D.,
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Report in Abdominal Surgery.—Dr. VAN DER VEER, of Albany, N. Y., read a very able and instructive paper on the history of 145 cases of abdominal surgery operated upon by himself, and read before the Am. Assoc. of Obst. and Gynæcologics, Toronto, 1894. (*Annals of Gynæcology and Padistry*, Oct., 1894.)

Dr. Van der Veer's paper shows a high rate of mortality, 17 deaths in 145 cases, but he is to be commended and respected by the profession throughout the country for his honest acknowledgment, and, as he says, his desire to lessen the mortality in the future by the lessons these accidents have taught him.

It is my intention to review but a few of the salient points in connection with Dr. Van der Veer's work, and if the author will recieve some suggestions from me in a kindly spirit I think I may possibly throw some light on the causes of this high mortality which Dr. Van der Veer, to my mind, does not seem to recognize.

The author classifies his fatal cases under two headings, "unavoidable" and "avoidable." Among the avoidable he describes minutely the following:

Case X. This was a case of "simple uncomplicated ovarian cyst." Death on the fourteenth day. The autopsy revealed pelvis containing a large number of blood clots. The abdominal cavity also showed evidence of the hæmorrhage having extended upwards. The clots had undergone septic change. The important part, however, in this case refers to the condition of the pedicle found at the autopsy. The author says the ligature had "loosened" and had allowed secondary bleeding to take place, and had

he used the drainage tube the bleeding would have been discovered before death.

In regard to the silk loosening, or slipping, as it is called, there was never a greater fallacy propounded and one more likely to deceive. Silk from its very nature is inelastic, rigid and cuts like a sharp clamp. It does not crush the tissues, but cuts them. Then when a slight shrinkage takes place in the part included in the knot the silk noose does not follow the shrinking pedicle as an elastic substance would do. Oozing begins gradually to take place and when it once begins it is only a matter of time for the patient to bleed to death. I do not think the drainage tube is of much guidance in such cases, as the blood clot will not always rise in the tube, but goes around or above it. The great error made is in the use of silk as ligature material; heavy catgut (No. 6) well sterilized fills all necessary requirements spoken of above. It is very strong, elastic and crushes the tissues without cutting them, and it will be found that if properly applied (which method can only be acquired by seeing) there will be room left for shrinking of the tissues after the double knot has been secured. In about thirty to forty days this material entirely disappears by absorption, which is another great advantage over silk.

As another safeguard against hæmorrhage I would draw Dr. Van der Veer's attention to the great advantage of thoroughly cauterizing the cut surface of pedicle with thermo-cautery before returning it. Throughout the whole of Germany silk is now rarely used—all catgut and almost all tissues are divided with thermo-cautery.

Case XLIII. Another case of uncomplicated ovarian cyst in which the fatal Staffordshire knot was used. Hæmorrhage set in five hours from operation. Abdomen re-opened pedicle religated, free use of saline solution into peritoneal cavity, drainage, &c., but she died 12 hours afterwards.

Here again the silk was to blame aided by the unreliable

Staffordshire knot. Other following cases died from hæmorrhage, shock, pneumonia, intestinal obstruction, &c.

Case LXXIII. It would have been well in this case to have kept her under hospital observation until the sugar had disappeared from the urine. Most surgeons would prefer operating on a patient with slight albuminura than saccharine diabetes. It is probably the very worst condition under which a surgeon can have to contend in so major an operation.

In the history of the remaining cases of death, they occurred from shock, exhaustion, septic peritonitis, &c., and the cause could very well be accounted for. In summing up the history of these cases, Dr. Van der Veer gives some directions about preparing the patient and the room in which the operation is to take place. As a rule I do not think it is wise to either prepare a patient at her home or to operate on her there. The profession and the public are both beginning to recognize the fact that there is only one place to treat a patient subjected to a surgical operation, with safety to the patient and the highest possible advantages to the surgeon in carrying out his work. The specially fitted up operating room in either a private hospital or public general hospital, is the only place an abdominal surgeon is justified in operating, with the exception of emergency cases which will not admit of being moved. Doing abdominal surgery in a large general surgical amphitheatre before some hundreds of students is, to my mind, morally wrong. Let any surgeon of unbiased mind compare the chances of a patient under these conditions and those where she is operated upon in a private room thoroughly equipped for the purpose, and in which no other kind of surgery is done, and by a specislist in this line of work who does no other surgery, and I think he will see the advantage of the latter. I am not sure whether Dr. Van der Veer uses sponges or not. If so I would strongly advise him to discard such dangerous carriers of infection. They are friable and likely te leave pieces

behind in the cavity which decompose in about 60 hours or less, no matter how carefully prepared, and give rise to so many cases of apparently unaccountable peritonitis. Gauze pads of various sizes made from the so-called "Butter cloth," thoroughly sterilized, are the only sponges reliable, and the only ones seen to-day in the university clinics throughout the whole of Germany. Should by any unavoidable accident, such as an error of the nurse in counting, a sponge be left in the cavity unless reopened at once, means a death. If, however, it be a sterilized gauze pad it may be removed months afterwards with but little inconvenience to the patient.

Dr. Van der Veer used the drainage tube 39 times in the 145 cases. This is certainly a very high rate of drainage cases. Surgeons are, I think, beginning to fight shy of the drainage tube, and depending more on perfection of technique and rapid operating for success. We all agree, I think, with the author when he writes about the attending physician procrastinating in bringing his patient to the specialist, and when he does bring her to express a desire to catch an early train that day after he has been present at the operation. Although I have not had any experience in this way, I am sure it has occurred in the past.

The Value of Local Treatment in Septic Infection of Puerperal Woman.—Dr. EVANS read before the Montreal Clinical Society recently a paper on this interesting subject (MONTREAL MEDICAL JOURNAL, December, 1894), and gave the members some very good advice. There are some statements of the author, however, which we cannot very well endorse, and which, we think, require a little friendly notice. Dr. Evans' intentions and views are undoubtedly well meant, but we think at the same time, a little strong and stormy. For instance he says, "Many practitioners have but the haziest ideas as to the subjective and objective symptoms of septic infection of the puerperal women, and these are scarcely less nebulous than their ideas of treatment." Dr. Evans then continues to impress upon his

audience the disastrous consequences of such a state of ignorance on the part of the general practitioner. Now statements of such a nature are not only incorrect, but are somewhat unjust to make in so sweeping a manner. So far as our experience goes, the general practitioner of medicine of to-day is the most highly cultured gentleman and the most considerate and careful of all men of the lives and welfare of his fellow creatures, and as an active teacher of pelvic disease in women, and consultant, I have reason to know that the practitioner's ideas of aseptic midwifery are anything but hazy, and that he is in no way slow to recognize the onset of accidental infection. We are sure that Dr. Evans does not appreciate the many difficulties under which obstetricians have to work. The ignorance of the general public, the contempt some people have for the man who wants to make *an unnecessary fuss* in their homes when the advent of a baby is to take place. The many sources of infection right in the lying-in-chamber over which he has no control. And above all, when symptoms of infection do occur, the obstinate refusal, in many instances, of the patient and her relatives, to acknowledge that there is anything unusually wrong, and to submit to local treatment until the disease has extended to the tubes and peritoneum. As regards the pathology and treatment expounded by Dr. Evans we have nothing to add but praise and endorsement. It would have been well, however, if the author had spoken with more caution regarding the use of the curette. It is truly a two-edged sword and may bring about as much harm as good. There is no other instrument, the use of which we are aware, requires more constant application—almost daily—to become sufficiently expert in its use, especially in puerperal cases, to ensure freedom from danger to the patient, than the curette.

Inaugural Address before the British Gynæcological Society, by Professor Thomas Savage.—In this able address Dr. Savage spoke strongly of the personal element, for

success or otherwise, of the individual operator. "No two surgeons would perform the same operation exactly in the same manner." In speaking of the great importance of details, he said: "The importance of this principal will be more and more manifest, when it will be universally admitted that when death occurs after such operations as abdominal section, it is due much more frequently to causes connected with the details of the operation, and therefore personal to the operator, than to any other cause. And because the personal element possesses such an enormous influence in success or failure—for good or for ill—he must ever be striving to that high ideal—*no deaths at all.*" While it is thought by many that there is a tendency to split up medicine into too many lines of work, and that perhaps we may, at the present time, not even have reached the limit, yet gynæcology stands out somewhat prominently on an assured and established basis, too secure now to be assailed upon its *raison-d'être*, and too strong in its accomplished and prospective work to be injured by cavil or deterred by scorn. Even the most rigid impersonation of Tory principles is bound to recognize the revolution which has taken place since gynæcology has shaken herself free from obstetrics, and started on a free and unfettered course." At the termination of this address, Dr. Barnes and Dr. Bantock made some remarks. Dr. Bantock said the address was necessarily only a *resumé*, but it was full of suggestion for action in the future. In one London society lately, a member proposed that the general surgeons should give up gynæcological operations to the gynæcologists; but it seemed to him that the suggestion did not go far enough. He would have proposed that a special official should be appointed to teach gynæcology, as in the provincial schools. Were he on the staff of a general hospital, he would urge that gynæcology should be more considered than it ever had been in the past. Surgery itself was indebted to gynæcology for the most important advances of recent years.

Echinococcus of the Ovary.—SCHULTZ (*Festschrift zur Feier des fünfzigjahrigen Jubilaums der Geselsch. Geburts. u. Gynæk. in Berlin*, 1894) has collected previous records, and believes that Chemnitz and Generali's cases are true examples of hydatid disease of the ovary. In 1893 he operated on a third case. He admits that it cannot be proved that the disease originated in the ovary. The patient was 32 years of age; her abdomen began to enlarge in 1888; in 1890 echinococcus of the peritoneum was diagnosed. In the autumn of 1893 Schultz detected an ovarian tumour, the uterus being free. The abdomen was tapped, but, though the fluid had the characters of that which is found in hydatid cysts, no hooklets could be discovered. On November 11th he operated. Thirty hydatid cysts were removed, some with great difficulty; there was free hæmorrhage, and other cysts proved irremovable. The largest tumour of all was six inches in diameter; over it ran the right tube, obstructed at the ostium. This tumour was nowhere adherent; it consisted of the ovary and was nowhere adherent. Its lowest part projected into Douglas' pouch, whence it was lifted without difficulty. The pedicle was normal and easily transfixed and divided. The left ovary and tube were healthy. The under surface of the liver and the kidneys seemed free from hydatids. The operation lasted over two hours, and saline water was injected into the subcutaneous tissue in the infraclavicular region whilst the abdominal wound was being sutured. The pulse continued to be very rapid for several days and there was obstruction on the third day, relieved by a dose of magnesia. The patient left the hospital on the thirty-first day in good health; the hyatids which could not be removed could be clearly felt. The greatest part of the removed ovary consisted of a cyst, the lining of which was freely beset with scolices. It contained three daughter cysts, the largest 3½ inches in diameter. The mesosalpinx was unaffected and the parovarian tubes ran into the hilum of the ovary, represented by thickened tissue on the

surface of the hydatid. In fact, the hydatid had developed, not in the broad ligament but in the ovary itself.

Removal of Appendages: Fatal Hæmoptysis.—QUÉNU *(Gazette Médicale de Paris*, 2, 1894), operated on a virgin aged 27, who had been sickly from childhood. Last autumn, when she suffered from leucorrhœa, etc., Quénu, finding no severe lesions, used the curette and kept her at rest two months. She became worse, and an operation was performed on March 9th. The tubes were found fixed by adhesions, tuberous, yellowish and caseating. She did well till the third day, when she had violent hæmoptysis and died. The sputum was used for inoculation; pneumococcic infection resulted. Each tube contained a great cystic pouch and numerous secondary cysts. In all these cysts the contents were granular without giant cells. In the walls of the cysts Metchnikoff discovered large cells, round pigmented bodies presenting the type of hæmatozoa. Bodies of the same kind were found in the lungs, but not in the blood.

Tuberculosis of the Fallopian Tube.—PENROSE and BEYER *(Amer. Jour. Med. Sci.*, November, 1894) report 5 cases found in a series of 25 abdominal sections for pelvic inflammatory trouble—a large percentage. All the 5 patients had been sterile, though 4 were married. In this respect these histories differ from those of ordinary cases of non-tuberculosis salpingitis, where, in the great majority, there is a history of at least one child or miscarriage before the disease reached such a stage as to render the woman sterile. In 3 no tuberculous lesion could be found elsewhere, in the fourth it was not certain the lungs were not involved, and in the fifth the tubal disease was, it appears, secondary to tuberculous disease of the hip. There was nothing in the symptoms presented by any of the cases to indicate that tuberculosis of the tubes or of the peritoneum existed, nor was anything elicited by a bimanual examination of the pelvis to allow of diagnosis other than that of adherent tubes and ovaries. The account of the beginning

of the disease was too vague in all the cases to allow it to be determined with any degree of accuracy, In no case could it be ascertained whether the tuberculosis began in a healthy tube or followed an attack of salpingitis. The disease assumes several forms when it attacks the tubes; they are well described by the authors, who conclude on the evidence of their own, and Whitridge Williams' researches, that primary tuberculosis of the female organs must be more frequent than modern statistics indicate.

Rupture of Uterus and Vagina.—DOHRN (*Centralbl. f. Gynak.* No. 11, 1894) relates how a woman, aged 41, in her eleventh labour, was driven in a sledge over eighteen miles to Konigsberg last December. The presentation was transverse and the uterus had been ruptured during an attempt at turning. The child was extracted, but not the placenta. She arrived in an exhausted condition, anæmic, and with distended abdomen. The funis hung out of the vulva, whence blood trickled rather freely. The vulva was at once cleansed with a 5 per cent. solution of carbolic acid. A 1 in 1,000 solution of sublimate was used to swab the vagina, which was afterwards irrigated with boracic acid lotion. Then, on exploration, a large rent was found in the cervix, extending into the left vaginal fornix. In the rent were coils of intestine and the placenta, which was extracted. After reduction of the bowel over six yards of iodoform gauze three inches wide were pressed into the vagina. A binder was firmly fastened round the abdomen. The patient at once began to recover. On the sixth day the tampon was removed. A little lochial secretion had trickled through it, but it was free from smell. On the fourth week the patient had an attack of pneumonia, from which she recovered. The uterus became fixed and dextroverted. According to Merz 7 out of 15 cases of ruptured uterus treated by the tampon recovered.

Myomectomy vs. Hysterectomy.—DUDLEY greatly prefers partial operation to complete removal of the uterus in suit-

able cases, and takes very conservative ground about removing the appendages as well as the tumour. He still thinks that moymectomy should be supplemented by removal of the appendages in :

1. Cases in which the appendages are the seat of such disease as would demand their removal under other conditions.

2. Cases in which the enucleation of the tumour or tumours has so injured the uterus as to render it incapable of performing its functions, especially if the injury be such as would cause cicatricial atresia of the uterine end of the fallopian tubes. This might be the occasion for the removal of the appendages on one side only. With increased experience this class of cases ought to diminish.

3, Cases in which the uterus contains an additional myoma so inacccessible as to make enucleation extremely hazardous.

Microbes in the Female Urethra.—GAWRONSKY (*Münch. med. Woch.*, No. 11, 1894) made cultivations of secretion from the female urethra, gathered by means of a sterilized speculum and a platinum needle. In 15 out of 62 cases bacteria were found, in 3 the streptococcus pyogenes, in 8 the staphylococcus pyogenes aureus, and in 1 the S. pyogenes albus, in 2 the bacillus coli communis, and 1 in Gessner's bacterium tholoeideum. Amongst the negative cases were 10 where the patients had peri- or parametritis, 6 prolapse, 3 pregnancy, and 1 gonorrhœa.

Fatal Metrorrhagia in Purpura.—RESNIKOFF (*Gazette Hebdomadire Médicale de la Russie Méridoinale*, 1895, 15) observed this condition in a girl aged 15, with no hereditary history. Diffuse ecchymoses and petechiæ appeared for eighteen months ; then bad attacks of epistaxis took place and continued for several months till the period was first established. Clots were discharged for a week. For three months the epistaxis ceased, and at the end of that time recurred. The second period was seen nine months after the first and proved fatal. For the first week the

show was slight; during the second clots were passed and symptoms of acute anæmia set in. Notwithstanding the application of hæmmostatics the patient died of the hæmorrhage on the nineteenth day.

Pulmonary Embolism After Operations on the Recto-Vaginal Septum.—BUMM: This complication having recently occurred twice in the author's experience, he devoted some attention to it. Whether the occurrence was merely a coincidence or not will probably soon be cleared up. In the two prolapsus cases forming the basis of the paper Bumn had performed amputation of the hypertrophic vaginal portion, anterior colporrhaphy, and stretching of the posterior vaginal vault after Franck's method, all at one sitting. Deep continuous catgut suture, with silver wire superficially. On the fourth and fifth days respectively after the operation symptoms set in which left no doubt that embolic infarction of the lung had occurred. The wounds in both patients healed by first intention without any secretion. As before the operation both the women had healthy hearts and lungs, with no thrombosis anywhere in the body, thrombi must have formed primarily in the venous plexus of the septum. A similar thing occurs in operations for hemorrhoids, and the same veins are involved when the recto-vaginal septum is split. The development or filling of the venous plexus about the vagina and rectum is very variable.

The two patients were not injured by the limited infarction with aseptic thrombi, but it is quite possible when first intentien is not attained that the thrombi in this region will undergo suppuration and cause much graver symptoms. The thrombi might also be infected by occasional injuries in the rectum. Careful coaptation of the surface by superficial silver wire or silk sutures after closure of deep wounds of the septum with the running catgut suture would therefore seem to be indicated.—*Centrbl. f. Gyn.* 1894, No. 29; *Am. J. Obstet.*

Technique of Vaginal Hysterectomy.—RICHELOT has

performed 225 vaginal hysterectomies during the last four years, with a mortality of 4.88 per cent, all by the clamp method. There was no hæmorrhage of importance, either primary or secondary, although they may easily occur in the hands of inexperienced operators, or if improper instruments are used. The clamp may seize a ureter as well as can a ligature, but is not likely to, as the clamp is applied under the guidance of the eye. If a piece of intestine is seized, it shows only that the operator was working in the dark. This accident never occurred in R.'s hands. R. denies the objection, sometimes raised, that the clamps obstruct the vagina. On the contrary, if properly applied, they serve to the better bringing of the field of operation into view. The only objection to the clamps to which R. ascribes any importance is that of pain from their use, and even this he regards as greatly exaggerated, and pain can easily be quited by an injection of morphine.

R. describes his instruments at length.

Correspondence.

A NEW MORGUE FOR THE CITY OF MONTREAL

To the Editors of THE MONTREAL MEDICAL JOURNAL.

DEAR SIRS,—We have taken the liberty of suggesting the arrangements necessary, from a medical point of view, in connection with a morgue for the city of Montreal, as the matter keeps cropping up from time to time in the City Council, and no very definite idea appears to exist as to what is needed.

One of us recently had an opportunity of visiting the morgues of the following cities: Boston, New York, Philadelphia, Baltimore, Cincinnati, St. Louis and Chicago, for the purpose of studying the arrangement and construction of buildings of this description, and the other has taken occasion to do the same with the morgue at Paris.

The general arrangement, apart from medical matters, is a matter into which it would be out of place for us to enter fully here, as it does not come within our province as physicians. We will therefore simply state that it should be centrally placed and be in direct communication with, or form part of a police station, in order that all matters concerning the guarding and identification of bodies shall be in the hands of the police.

In Montreal the morgue would naturally have to contain a coroner's office and a court for holding inquests, with a separate room for witnesses. Some provision for the safe keeping of the records is also necessary. There should be an apartment for the janitor or guardian of the building.

MEDICAL ARRANGEMENT.—The essential requirements are (1) the mortuary, (2) the room for autopsies, (3) the laboratory.

1. *Mortuary.*—A mortuary is required for keeping bodies

during the pending of a medical examination or inquest and for keeping unknown bodies as long as may be necessary for identification. As this must be done without danger to health and without creating a nuisance, some means must be employed to prevent the decomposition of the bodies.

The system of cold storage in a dry atmosphere at about the freezing point is the only means which has been found suitable for this purpose elsewhere and has the advantage of costing very little, after the apparatus has been constructed.

A cold storage chamber suitable for the requirements of Montreal could be made at a cost of about $1,200 by building a chamber with double wooden walls, the ceiling consisting of a galvanized iron tank filled either with brine cooled artificially, or simply with a mixture of ice and salt. By this means the temperature in the air space below can be maintained at the freezing point for an indefinite time and all danger of the nuisance and danger to health arising from putrefaction avoided.

In Montreal, where ice is cheap and plentiful, its use would be probably found more economical than that of artificial means of obtaining cold, especially if the ice was stored on the premises. In any case, if it was subsequently found advisable to substitute some artificial process, such as the ammonia distillation or expansion, no further change would be required than simply fitting the expansion tubes into the tank. By either artificial or natural cold the cost ought not to exceed a couple of hundred dollars per year. The use of cold would only be necessary during the period from May to November; during the remainder of the year sufficient cold can be obtained from the outside air by having a flue opening outside.

Some provision for refrigerating is absolutely essential for medico-legal purposes in Montreal, since during the summer, especially in the case of drowned bodies, the effects of putrefaction make identification uncertain and the results of autopsy unreliable, under ordinary conditions

in the course of a few hours. In addition, where it is necessary to preserve organs for a time, pending inquiries as to the necessity of a chemical analysis, putrefactive alkaloids are produced in them which tend to confuse the results of the chemist and at the same time the poisonous alkaloids tend to become destroyed.

Whether it is desirable to make a place where the bodies of unknown persons are kept, a place of public show, which any person shall be allowed to visit through morbid curiosity, or whether the view of such bodies should be restricted to those who are professionally or personally interested in their identification, is a question which can best be decided by the police. There is much to be said on both sides, but certainly the less the idea of a morgue is made repugnant to the general public the better. In any case means should be taken to secure that bodies which have been identified shall not be needlessly exposed, and that as far as possible inquirers shall only be obliged to see such bodies as correspond in sex, age, etc., with the individual whose identity it is sought to establish.

By keeping a description of the body, clothing, etc., together with a photograph, in the coroner's office, it could be at once stated whether any of the bodies in the morgue corresponded with those sought. Photographs suitable for this purpose can readily be taken with an ordinary Kodak camera and can be printed at a cost of only a few cents each. Such photographs would, in addition, form a permanent proof of the appearance of the body if it finally had to be buried unidentified.

The chamber for viewing these bodies should be so placed as to be accessible without interfering with the other parts of the morgue. It could be illuminated either by daylight or by electricity, in which latter case the consumption of ice would be decidedly less.

In connection with the mortuary there should be a room in which undertakers could lay the bodies in coffins and in which the bodies could be received. This should have a

separate entrance apart from that used by the public and situated in the rear of the building.

The mortuary should communicate directly with the post-mortem room. The jury could view the body, if necessary, in the mortuary.

2. *Room for Autopsies.*—The autopsies should be performed in a large, well-ventilated room lighted partly from above. This should be furnished with a suitable dissecting table and instruments, weights and measures. Hot and cold water should be provided and there should also be a good artificial light, in case examinations have to be made at night.

It is very essential that accommodation should be provided for physicians, medical students, law students and other persons interested in medico-legal investigations, so that they may have the benefit of seeing autopsies performed. The absence of some such arrangement at present is a serious drawback to the proper education of physicians in medico-legal duties, the result of which is only too apparent throughout the country.

Provision should of course be made by which, when it is considered necessary by the judicial and police officials, an autopsy may be perfectly private and only witnessed by such persons as are officially necessary. This restriction might seldom require to be enforced, but should be left under the control of the coroner.

For autopsies which have to be held privately, or where more than one autopsy has to be held at the same time, a smaller post-mortem room is required, connecting directly with the mortuary and placed in a part of the building not accessible to the public. By this means, when it is necessary to order the removal of a body from a private house in order to secure a more thorough medical examination, the friends and relatives could be assured that the body would not be exposed to the public view.

3. *Laboratory.*—In connection with the autopsies microscopical examination is often necessary before an opinion

can be given, and the examination of blood-stains, hairs and other substances is often necessary. For this reason a small laboratory, provided with the necessary apparatus and fittings, should adjoin the post-mortem room.

Part of this labratory should be arranged for making simple chemical examinations, especially of the blood, urine and the contents of the stomach. It would probably not be expedient to provide a fully equipped chemical laboratory for elaborate chemical analysis, as this work is better entrusted to some regular chemical laboratory in important cases. In poisoning by certain volatile substances, notably prussic acid, it may be necessary to have the reagents for a chemical test immediately at hand. In connection with the laboratory a supply of jars suitable for preserving organs for analysis should of course be always available.

In poisoning cases it is often necessary to perform experiments in order to establish the poisonous nature of the substances isolated by the chemists. As such work alone, should be made jointly with the physicians of the morgue, a room for keeping animals under observation should be available somewhere in or near the building.

In connection with the autopsies it is often necessary to consult books of reference in regard to a number of special anatomical and other details which it is impossible to retain in the memory. A collection of standard books on legal medicine should therefore be available.

It is often necessary while studying an injury to compare it with other similar injuries, and for this purpose a collection of medico-legal specimens should be available. A small museum would not necessarily involve an increase in the size of the morgue, as the rooms containing it could be also employed for other purposes.

The maceration of skeletons is from time to time necessary in order to determine questions of identity or to study the nature of injuries. Specimens exhibited in court are often of great value in explaining the true nature of injuries to the jury.

In concluding, we wish to state that there are two classes of morgues: The one, are those employed simply as places of deposit for dead bodies; the other those which form recognized centres of medico-legal investigation and teaching, and have raised legal medicine to its present important position. As both classes of morgue cost practically the same sum to build and equip, the future success or failure of a morgue depends upon how it is designed and above all how it is conducted. It is to be hoped that in providing a morgue those in authority will furnish one in every way worthy of this city.

A building such as we have suggested could, as has already been pointed out by Coroner McMahon, be constructed by capitalizing the sum now annually paid by the coroner's court in connection with the transport and care of bodies, rooms for juries, and so forth. If built in connection with the police station the annual cost of heat, lighting and attendance would form but a trifling amount.

In the American cities mentioned above, and in most European cities, the construction and running expenses of morgues are met by the municipalities. In the case of Montreal it appears as if expenses in connection with transport, preservation, guarding and burial of bodies, as well as arrangements to prevent nuisance or danger to health, should legally belong to the city, while those in connection with judicial or medical study of the cases should be borne by the Province.

No doubt an amicable arrangement could be readily arrived at by which a satisfactory service could be obtained at an outlay not exceeding that required for our present very primitive arrangements.

The whole is respectfully submitted.

(Signed) WYATT JOHNSTON.
GEORGE VILLENEUVE.

INDEX MEDICUS.

To the Editors of THE MONTREAL MEDICAL JOURNAL.

DEAR SIRS—I have learned that the *Index Medicus* will cease to be published with the February number, owing to lack of support and the fact that a large number of its subscribers are delinquent, unless an effort is made to continue it.

The value of this publication is so great that I take the liberty of writing to you to express the hope that you will not only become a subscriber, but will urge other of your professional friends to do so.

It is particularly necessary that the *Index Medicus* should be continued, owing to the fact that after the completion of the supplementary volume of the *Index Catalogue of the Surgeon General's Library* there will be no record of contemporary medical literature, and he who desires to keep pace with it, or wishes to study a particular subject, will have to resort to the laborious task of seeking in various journals that which he desires, if the publication of the *Index Medicus* ceases.

It will be possible to continues the *Index Medicus* if 500 new subscribers are obtained. The subscription price is $10 per annum, which should be sent to Mr. George S. Davis, publisher of the *Index Medicus*, Box 470, Detroit, Michigan.

As the *Index Medicus* can never be made a success from a commercial point of view because of the peculiar scope of its work, I have no hesitancy in making you acquainted with these facts, and I earnestly hope that you will insert a notice emphasizing the importance of this matter in the columns of your valuable journal.

Yours truly,

H. A. HARE.

Philadelphia, Dec. 7, 1894.

Reviews and Notices of Books.

A Treatise on the Principles and Practice of Medicine. Designed for the Use of Practitioners and Students of Medicine. By AUSTIN FLINT, M.D., LL.D., late Professor of Medicine in the Bellevue Hospital Medical College, New York. Seventh edition; thoroughly revised by F. P. Henry, A.M., M.D., Professor of Medicine in the Women's Medical College of Pennsylvania. Philadelphia: Lea Brothers & Co. 1894.

We are pleased to see that Flint's Practice of Medicine has been brought up to date. For many years it was the leading work on medicine by an American author, but owing to its non-revision for the long space of eight years it was gradually being displaced as a text-book. Now, however, it will again take a worthy stand among the many other admirable works of a similar character published in America and England.

The task of revision was entrusted to Dr. F. P. Henry, of Philadelphia, and he has very ably fulfilled the onerous duty. Dr. Henry has added many new articles, besides correcting and making additions to the subjects treated of in the last edition.

Among the new articles may be mentioned those on pulsating pleurisy, Weil's disease, syringomelia, beri-beri, hereditary chorea, acromegaly, Reynaud's disease, influenza, lithæmia, rickets, actinomycosis, anthrax, glanders, etc. The subject of gastric neurasthenia in its manifold manifestations has been entirely re-written and brought up to the most recent knowledge on this important subject.

Inebriety, or Narcomania; Its Etiology, Pathology, Treatment and Jurisprudence. By NORMAN KERR, M.D., F.L.S., Fellow of the Medical Society of London, etc. Third edition. London: H. K. Lewis, 136 Gower street, W. C. 1894.

The third edition of this standard work on inebriety contains upwards of 300 pages of new matter, dealing with

etheromania, the true place of alcohol in therapeutics, the relations of insurance to inebriety, the relation of inebriety to civil law, the criminal responsibility of the inebriate, etc. etc. Some very valuable information is given about the legislation regarding it in different countries, including the United States and Canada.

The work bears the evidence of a great amount of research compiled with judicious care. Its perusal will well reward the medical practitioner. It is a handsome and well printed volume of 750 pages.

Lectures on the Diagnosis of Abdominal Tumours. By WILLIAM OSLER, M.D., Professor of Medicine, Johns Hopkins University, Baltimore. (Reprinted from the *New York Medical Journal*, 1894.) New York: D. Appleton & Co. 1894.

We have here a very valuable series of lectures on abdominal tumours. They include tumours of the stomach, liver, gall bladder, intestines and kidneys. They are founded on the careful investigation of sixty-six cases that were under Dr. Osler's observation in the Johns-Hopkins Hospital in the year previous.

A Synopsis of the Practice of Medicine. By WILLIAM BLAIR STEWART, A.M., M.D., Lecturer on Therapeutics, late Instructor in the Practice of Medicine, Medico-Chirurgical College of Philadelphia, etc. New York: E. B. Treat. 1894.

One turns with some curiosity to the preface to learn what the aim of such a book can be and reads "To give the busy practitioner and student concise, accurate and brief descriptions to suggest outlines and practical thoughts." The mere enumeration of causes, symptoms and treatment in the smallest possible space is of doubtful utility except, perhaps, as an artificial memory to the student preparing for examination, but the claim to accuracy is not borne out. Among other things one reads that "Malaria is produced by the bacillus malariæ isolated by Lemaire, Klebs and others," and there is no mention of the hæmatozoa or of examining the blood. Appendicitis appears only as a variety of typhlitis to which a page is devoted. The points of diagnosis are "a

tumour like hard links of sausage" in the right iliac fossa with pain and high fever.

Temperature Chart. Prepared by D. T. LAINÉ, M.D. Philadelphia: W. B. Saunders. 1894.

This chart is designed for use in cases of typhoid fever treated by the Brand method. On the back is printed full directions for giving the baths, feeding, etc. The face of each chart is ruled for four days, each day is divided into eight divisions, and these are again divided, making sixteen divisions for the twenty-four hours, so that the temperature can be recorded every three-quarters of an hour. Spaces are left for pulse, respiration, urine, etc.

The chart is most complete and will be of the greatest service to anyone using this method, especially as both the Fahrenheit and centigrade systems are marked.

Saunders' Question Compends, No. 24. Essentials of the Diseases of the Ear. By E. B. GLEASON, S.B., M.D. Philadelphia: W. B Saunders, 925 Walnut street. 1894.

We have before us for review another of Saunders' Question Compends, forming No. 24 of the series. This number treats of diseases of the ear and is written by Dr. E. B. Gleason.

To start with we, as before stated, do not believe in these extremely condensed works, too much is sacrificed in the attempt at condensation. The work before us forms no exception to this failing, and we must say lacks in clearness in many points.

The work is freely illustrated, clearly printed, and as a work of the printer's hands well gotten up.

Annual Report of the Medical Health Officer for the Parish of St. George the Martyr, Southwark, London, 1893. By F. J. WALDO, M.D.

This report, which is 90 pages long, deals with the sanitation of a city population of 60,000, situated in one of the poorest and most crowded parts of London, the number of persons per acre being 211, as compared with 57.7 for the whole of London, or roughly speaking nearly four times as great. As might be expected the death rate is relatively high, being 26.7 per 1,000, the rate for all London being 21.3.

Of the 13.000 tenement occupiers one-third live in one room and another third in two rooms. In other words about 1 in 14 is born, grows up, eats, sleeps and dies within the four walls of a one-room tenement.

It will be noticed that the death rate in St. George the Martyr, in spite of the over-crowding and the fact that a severe epidemic of scarlatina prevailed throughout the year, is identical with that of Montreal at present, so that something more than elbow-room appears to be needed for our own sanitary affairs.

We notice that 134 inquests were held in the parish during the year and in these autopsies were made in 101 cases. Comparing this with the annual number of medico-legal autopsies held in Montreal we find that for similar populations these autopsies are twelve times as frequently held in St. George's.

The Medical News Visiting List for 1895. Weekly (dated, for 30 patients); Monthly (undated, for 120 patients per month); Perpetual (undated, for 30 patients weekly per year); and Perpetual (undated, for 60 patients weekly per year). The first three styles contain 32 pages of data and 160 pages of blanks. The 60-Patient Perpetual consists of 256 pages of blanks. Each style in one wallet-shaped book, with pocket, pencil and rubber. Seal grain leather, $1.25. Philadelphia: Lea Brothers & Co. 1894.

The Medical News Visiting List for 1895 has been thoroughly revised and brought up to date in every respect. The text portion (32 pages) contains the most useful data for the physician and surgeon, including an alphabetical table of diseases, with most approved remedies and a table of doses. It also contains sections on examination of urine, artificial respiration, incompatibles, poisons and antidotes, diagnostic table of eruptive fevers and the ligation of arteries. The classified blanks (160 pages) are arranged to hold records of all kinds of professional work, with memoranda and accounts. The selection of material in the text portion and the arrangement of the record blanks are the result of ten years of experience and special study. Equal care has been bestowed upon the mechanical execution of the book, and in

quality of paper and strength and beauty of binding nothing seems to be left wanting. When desired a ready reference thumb-letter index is furnished, which is peculiar to this visiting list, and which will save many-fold its small cost (25 cents) in the economy of time effected during a year. In its several styles *The Medical News Visiting List* adapts itself to any system of keeping professional accounts. In short, every need of the physician seems to have been anticipated in this invaluable pocket companion.

Bibliography.

Total Extirpation of the Uterus by a New Method. By Alfred H. Tuttle, M.D., S.B., Surgeon to St. Omer Hospital, Boston, Mass. Reprinted from the *Boston Medical and Surgical Journal* of October 18, 1894.

A Case of Chronic Peritonitis, with Intestinal and Abdominal Fistulæ, Enterorrhaphy, Recovery. By Frederick Holme Wiggin, M.D., President of the Society of Alumni of Bellevue Hospital, Visiting Surgeon to the City Hospital, Gynæcological Division, New York. Reprinted from the *Medical Record*, August 11, 1894.

Cauterization of the Nares and Accidents that May Follow. By E. Fletcher Ingals, A.M., M.D., Chicago. Read before Annual Meeting of Illinois State Medical Society, Decatur, May 15–17, 1894.

Royal Society of Canada. Section III. Presidential Address. Read by G. P. Girdwood, M.D., M.R.C.S., Eng., F.R.C.S., F.I.C., etc., Professor of Chemistry McGill University Medical Faculty, late Assistant Surgeon Grenadier Guards. May 22, 1894.

Canadian Medical Literature.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL.]

PERIODICALS—NOVEMBER, 1894.

CANADIAN PRACTITIONER.

The Péan-Segond operation in suppurative diseases of the female pelvis—G. H. Rohé, Catonsville, Md., p. 799.

The antitoxine treatment of diphtheria—J. J. Mackenzie, Toronto, p. 804.

The position of the science of medicine in these later days—G. A. Peters, Toronto, p. 807.

Hæmatocele due to extra-uterine gestation—J. P. Kennedy, Wingham, Ont., p. 820.

ONTARIO MEDICAL JOURNAL.

Three cases of uncontrollable vomiting of pregnancy cured by curetting the uterus—A. Lapthorn-Smith, Montreal, p. 117.

Immediate capsulotomy following the removal of cataract—L. Webster Fox, Philadelphia, p. 120.

A case of empyema of gall bladder from gall stones—Operation, recovery—H. Meek, London, Ont., p. 123.

THE CANADA MEDICAL RECORD.

Three cases of cœliotomy—A. Lapthorn-Smith, p. 25.

Double femoral herniotomy in a woman 64 years of age—S. E. Milliken, New York, p. 28.

DECEMBER, 1894.

THE BRITISH MEDICAL JOURNAL (Dec. 1st).

(1.) Preliminary note on an epidemic of paralysis of children—Andrew Macphail, Montreal, p. 1233.

THE PHILADELPHIA MEDICAL NEWS (Dec. 7th ; Dec. 15th).

(1.) An epidemic of paralysis in children with a report of one hundred and twenty-three cases—Andrew Macphail, Montreal, p. 619.

ANNALS OF SURGERY.

(2.) Ether anæsthesia ; clinical notes on three hundred cases—G. Gordon Campbell, Montreal.

MARITIME MEDICAL NEWS.

Some facts and fancies concerning influenza, G. D. Turnbull, Musquodoboit, p. 443.

The importance of early operation for cancer—Edward Farrell, Halifax, p. 449.

(1.) This paper also appeared in the December number of this JOURNAL.

(2.) This article consists of a series of three papers read before the Montreal Medico-Chirurgical Society, dealing with the administration of ether by Clover's inhaler. The conclusions arrived at by the author are of the greatest value, and should be carefully studied by all interested in the subject of anæsthetics. Synopses appear in April, 1893, page 744 ; June, 1894, page 942 ; December, 1894, page 445, of this JOURNAL.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Two cases of Skin Grafting—Dr. Armstrong.
Aortic Stenosis and Incompetence with Tricuspid Involvement—Dr. McConnell.
Notes on a Cerebral Tumour—Dr. James Stewart.
End to End Anastomosis of Intestine by means of the Murphy Button—Dr. James Bell.
Spitting on Floors.

Stated Meeting, November 30th, 1894.

G. P. GIRDWOOD, M.D., PRESIDENT, IN THE CHAIR.

Drs. J. A. Henderson and E. D. Aylen were elected ordinary members.

Two Cases of Skin Grafting.

Dr. ARMSTRONG showed a man and a boy on whom he had recently performed the operation of skin grafting.

The boy, aged 16, was burned in rather an unusual way some time before. A gentleman walking along the street in front of him, after lighting a cigar, had thrown the match behind and ignited the boy's clothes, severely burning him about the arm and chest.

The cicatrix following the burn had bound the arm to the chest in such a manner that he had only the use of his forearm, and the operation was undertaken to relieve this condition. The arm was freed by dividing the cicatrix, and it and the corresponding side of the chest were grafted with skin taken from other parts of the body.

The result was very good ; the arm and chest, including even the axilla, over the area corresponding to the cicatrix, were now covered with healthy skin, and the upper arm was quite moveable. Sensation over the grafted area, while not perfect, was all that could be expected, and was improving daily. Sensation in these cases, first appeared at the periphery and worked towards the centre.

In the case of the man, there had been malignant disease of the skin in the region of the temple, reported to be endothelioma. It had all the characteristics of a rodent ulcer. Until recently, it had been the custom to wait, after preparing the region, until granulations had appeared before applying the graft. Lately however, both time and pain had been saved by applying the grafts to the raw surface, and completing the whole operation at once. Dr. Armstrong had adopted the latter method in this case, and the result proved successful. He covered the area, which appeared to be about 1½ to 2 inches in diameter, and fully ⅜ of an inch deep, by a single graft. At the time shown it was almost on a level with the surrounding surface and approaching nearer to that point daily. He had encountered some difficulty in rendering that portion of the skin which bordered on the hair of the scalp aseptic. not being able to obtain any chemical capable of disinfecting without destroying the tissues, and in consequence the grafting had not done quite as well in this region. The quality of the skin appeared to be very good, it was quite moveable over the underlying tissue, and sensation was present at the periphery and increasing towards the centre daily.

Dr. GORDON CAMPBELL was present at the operation. At the time it seemed to him that the patient, though benefited by removal of the ulcer, would still be disfigured by the depression in the temple, which, as Dr. Armstrong had stated, was fully ⅜ of an inch below the surrounding surface. The amount of filling in that had gone on would hardly be credited by one who had not seen the previous condition.

Aortic Stenosis and Incompetence with Tricuspid Involvement.

Dr. MCCONNELL read the report which will be published in a future number.

Dr. ARMSTRONG remarked that the apparent cure of the appendicitis had proved nothing. Only a short time before he operated upon a man for this disease twelve hours after

the onset, and yet the operation was too late to save the patient. He had had previous attacks, but had been free from any for the past fifteen years.

Dr. JAMES BELL had a student now under his care in the hospital who had an attack of appendicitis about 15 years ago. He recovered without operation, and felt no further trouble until about three months ago, since which time he has had five different attacks.

Dr. LAFLEUR after examining the condition of the heart failed to see any tricupsid involvement, the valve appeared perfectly normal. He did not, therefore, think Dr. McConnel's diagnosis borne out in this respect.

Dr. FINLEY thought the presystolic murmur here might be explained on Dr. Austin Flint's theory, that in a certain number of cases of aortic regurgitation, a presystolic murmur heard at the apex was the result of the floating upwards of the mitral segments, thus narrowing the orifice, and producing this sound.

Notes on a Cerebral Tumour.

Dr. JAMES STEWART read a paper on this subject, which will be published in a future number.

Dr. C. E. CAMERON said this patient had come under his care two years ago last summer. At that time he had hallucinations ; he thought some beasts, as he called them, were crawling round his neck, and wanted the doctor to remove them ; he also believed he had worms in his stomach which he said were interfering with his digestion. Shortly after this he took to bed, and never left it till he died. Latterly he never made any complaints, never even sought his meals ; he lived, but his life was more like that of a vegetable, than animal. He lost control of his sphincters during the last year.

Dr. SHEPHERD regretted that Dr. Buller was not present, as he had for some years under his care a patient suffering from a tumour not unlike this. It grew from the pituitary body, and after lasting some years, involved the ethmoid and the palate bones, until you could finally see the tumour

through the mouth. The specimen existed in the museum of McGill University.

Dr. MILLS regretted that the condition of the brain was so far advanced in decomposition at the time of the autopsy, otherwise he believed the microscope should reveal some other degenerated conditions besides the presence of this tumour to account for all the symptoms in the case. Of course it was possible that the connection of the tumour with the pituitary body was capable of causing all these complex symptoms. Some said that this organ was allied to the thyroid, and being a blood viscus it might explain the anæmia. It would at any rate be important to ascertain definitely whether or not the pituitary body was involved in the tumour, and if it was many of the symptoms could be explained.

Dr. ADAMI, replying to Dr. Mills' remarks, said he had looked carefully through a large number of sections taken from that region, but had been unable to find any pituitary substance, which had apparently completely atrophied.

End to End Anastomosis of Intestine by means of the Murphy Button.

Dr. JAMES BELL read the paper, which will be found on page 481.

Dr. ADAMI, reporting on Dr. Bell's cases, remarked that with regard to the first specimen, the portion of the intestine removed had been examined by Dr. Shaw who made a series of sections, which showed that the cicatricial band in the intestines was not of the nature of simple fibrous tissue, but of fairly fibrous columnar-celled carcinoma. The post-mortem, which was made several hours after death, took place on Sept. 15th. Upon opening the abdomen, acute inflammation was noticed throughout the abdominal cavity. Fæces were first seen coming up through the region where the drainage tube had been, with gas bubbling up through them. Working down in this region they came to the sigmoid flexure, and the portion of the intestine where the " button" had been inserted, and found that

sloughing had taken place between the upper half of the button and the attached intestine, which opened up the bowel, and allowed its contents to escape. The mesentery in the region of the slough was enormously thickened. It seemed to Dr. Adami that the slough had occurred more in in the region of the rectum than in that of the sigmoid flexure.

Dr. SHEPHERD congratulated Dr. Bell on his success in the last case. The fatal result in the first he thought was not the fault of the operator, but was owing to circumstances over which he had no control. It would be interesting to know what caused the non-union of the bowel. He had performed several operations of resection, but had always done the end to end suture. His difficulties had been with the mesentery, which tears, especially in regions where it is short, such as near the ileo-cæcal valve. The use of the clamp is another difficulty. Very little pressure is required to keep the bowel closed while the resection is progressing, and some instrument which will exercise exactly the right amount is much needed. He either used a rubber tube, or the hands of the assistant, the latter are best, but they are apt to be in the way; the rubber tube often exercises too much pressure. It is not the actual approximation of the bowel which takes up the time, but these other difficulties, which will exist just the same, notwithstanding the use of the Murphy button.

Dr. JAMES BELL after explaining the manner in which the Murphy button was used, remarked that in the old method of simply suturing, he always felt considerable uneasiness as to the danger of the sutures giving way. It was true he never had such an accident occur in any of his cases; but when one considered the friable nature of the tissues united, it was not an improbable danger, and the increased security which the "button" gave in this respect was an advantage in addition to its saving of time. In concluding Dr. Bell remarked that he began to use the Murphy button with some prejudice against it, but after

trying it, he was bound to admit it a very useful instrument indeed.

Dr. ADAMI commenting on Dr. Bell's theory as to the cause of the sloughing in his fatal case, said that at the post-mortem the glass tube was found rather to one side of the bowel, towards the middle line. It was found passing down to the portion of the bowel which held the button, which latter could be felt at the end of the tube when it was pressed down into the wound. It is possible, therefore that there might have been some undue pressure on the bowel between the button and the tube, but as the tube at most could, from its position, press against the inner (or medial) side of the intestine and the gangrene was equally developed all round the organ, save at the mesentery, it seemed to him more probable that the cause of the sloughing was the pressure of the elastic ligature on the intestine during the operation.

Dr. ARMSTRONG remarked that he had no special experience with the Murphy button ; but that he had this last summer seen one post-mortem where it had been used, and where a good deal of sloughing had taken place around it. He frankly admitted himself a little prejudiced against the instrument. He did not think it saved much time, it could only economise in this way, in the matter of suturing, and in operations of this kind, his experience was that it was not the end to end suturing which caused most trouble in competent hands, but the dealing with the mesentery. The old method had given good results, and when properly performed, leakages from the bowel very seldom followed the operation. He, however, could conceive of cases where the button might be an advantage, namely when resection had to be performed in portions where the bowel was not easily accessible to the hands, such as deep down in the pelvis ; but in any situation where the intestines could be brought up, and conveniently sutured he would prefer the old method. His great objection to the " button" was the manner in which it separated. This must of necessity be

by a process of ulceration, which seemed to him a very undesirable condition occurring around the two ends of a lately united bowel.

Dr. JAMES BELL closed the discussion by answering some of the principal objections to the use of the Murphy button, and giving a brief *resumé* of the complications existing in his fatal case. It was easy, he said, to see why the button did not in this case come away. In the first place he had narrowed the bowel before it, and in the meantime the stricture which occurred in the sigmoid flexure effectually prevented it. With regard to the saving of time, this came in, in the fact that in the purse string suture, there were not more than a dozen needle punctures to be made. The only suture that required to be accurate was that which brought the two folds of the mesentery together. This certainly saved time over the ordinary suturing method, where the needle had to be entered four or five times as often. Referring to the first case, he said the sequence of events was as follows: (1.) A perfectly healthy man taken with diarrhœa; (2.) following this was constipation, with evidence of obstruction, of pain, and of hæmorrhage. At the first operation it was found that the obstruction existed in the small intestine, loops of which had been destroyed by a destructive ulceration. At this time there existed no obstruction in the descending colon or rectum, and after the disease of the small bowel had been removed, perfectly formed stools were passed regularly, showing the functions of the intestinal tract to be normal. Now the interesting part of the problem is, how all this trouble could have developed. Dr. Bell's idea was that it must have originated in the peritoneum over the brim of the pelvis, and that it afterwards extended to the bowel. From a mechanical point of view this seemed the most probable sequence of invasion.

Spitting on Floors.

The following resolution was moved by Dr. MILLS seconded by Dr. MCCONNELL and carried unanimously:

Inasmuch as spitting on floors is a practice not only filthy but dangerous to health,

It is hereby resolved, to urge upon the Montreal Street Railway Company the desirability of prohibiting spitting on the floors of their cars by notices posted prominently.

Discussion on the Management of the Third Stage of Labour.

Dr. J. C. CAMERON opened the discussion. The third stage of labor being the separation and expulsion of the placenta and membranes, it became necessary to enquire, what were the placenta and membranes? to what were they attached, and how were they attached? He described briefly the decidual lining of the uterine cavity which prepared for the reception of the impregnated ovum; the arrival of that ovum, with its chorionic covering, planting itself in the portion of the decidua, afterwards called serotina, and the development of the decidua reflexa; the part taken by the decidua in the formation of the placenta; the formation of the amniotic sac; the growth of the ovum until it finally fills the whole uterine cavity, and unites the decidua reflexa with the decidua vera, or original decidual lining of the uterine wall. The membranes then were three-fold, and together they form a tripartite bag which is filled with fluid in which floats the embryo. Considering the character and texture of the separate membranes, and taking them in the order of their occurrence commencing from the inside, he said the (1) amnion was elastic and strong; (2) the chorion was thicker and more friable, and connected very intimately with the (3) decidua which was composed of two layers, an internal dense and firm, an external of a more spongy character. Summing up the character of the membranes as to strength, the latter decreases from within outward; the amnion very strong, the chorion less so, the decidua being least of all, has very little cohesion.

When labor is about to begin, the uterus is an ovoid body, with walls of tolerably equal consistence except at the lower part where the body joins the cervix. About one-

fifth of its cavity is lined with placenta, and the remaining four-fifths with the membranes. The cervix at this time is completely closed but with the onset of pains, the bag of waters is forced down upon the internal os and gradually opens up the cervix by a process of bulging. In order to bulge and dilate the cervix, the membranes must separate from their uterine attachments; during the first stage we find that they are separated from the lower uterine segment. At the beginning of the second stage they rupture and there is no further separation of the membranes till after the birth of the child. At the beginning of the third stage we find the uterus reduced considerably in size, and differentiated into two parts, an upper thick-walled contractile part, a lower thin walled dilatable part; the function of the first is to contract, and expel the placenta; of the second to expand, and give passage to it. There is no foundation for the statement that the placenta begins to separate normally when the head is being born. How then does the separation take place? Let us first recall how the different membranes are joined together. The amnion is loosely attached to the chorion; the chorion is intimately connected with the decidua; and the decidua is attached to the uterine wall in pretty much the same manner as the mucous membrane is attached to the non-pregnant uterus. Having then very firm union between the chorion and decidua, and a more feeble union between the chorion and amnion, and between the decidua and the uterine wall, it is only natural to expect that the lines of cleavage, or separation of the membranes, would be either between the amnion and chorion or between the decidua and uterine wall. The latter is where separation usually takes place. What is the mechanism of the separation of placenta and membranes from the uterine wall? Various factors are concerned; (1) the contraction of the uterus; (2) the retraction of the uterus; (3) the effusion of blood. Dr. Cameron then dwelt upon the two theories which were put forward to explain the expulsion of the placenta. The one claimed that the contractions of the uterus during labor

caused the placenta to arch or bulge downwards into the uterine cavity, causing a partial separation from the uterus with effusion of blood into the concavity of the arch, between the placenta and uterus. The pouring out of this blood caused by its pressure a still further increase of the arching process until finally the whole placenta separated and descended with its fœtal aspect presenting. The other theory was that rupture of vessels played no part in the separation and expulsion, which were solely the result of the contraction and retraction of the uterus. The speaker thought both explanations were right in certain cases, the situation of the placenta as well as its extent determining the mechanism of separation and expulsion. When the uterine wall contracts, the placenta contracts also, it moves with, but not to the same extent as, the uterus. The placenta can be diminished in area by contraction about one-half on the average. Having reached the limit of its reduction in size, it remains rigid, while the uterus goes on contracting, and draws itself off from the placenta. Some authors believe this separation begins in the centre, some at the side. It was then explained how it may occur in either way. In studying the mechanism of separation it is important to remenber that the whole uterus contracts, not the placenta only, so that not only does the placental surface decrease in size, but the whole uterus contracts and grasps it on all sides. The method of separation depends largely upon whether the uterus contracts upon the placenta evenly all around, or whether the contraction is irregular; and upon whether the placenta is uniformly adherent to the uterus or has some points at which it is more firmly adherent than others. Irregular uterine action and abnormal or pathological attachment of the placenta modify the mechanism of the separation and expulsion of the placenta.

Another point to be borne in mind is that there is not normally a true uterine cavity into which the placenta may bulge. As soon as the child is born, the uterus contracts and the anterior wall comes against the posterior wall. It

is this absence of an actual cavity which makes the theory of the arching of the placenta untenable in most cases; sometimes when it is situated directly over the fundus, its central portion may bulge down towards the os which is the point of least resistance. But if the placenta is situated upon the side of the uterus, arching does not take place, but the lower edge glides downwards and presents at the os. Coming then to the separation and expulsion of the membranes, it will be remembered that the portion over the lower utérine segment was separated during the first stage; the rest which constitutes about four-fifths of the whole is attached. The membranes are separated (1) by retraction of the uterus during the second stage and the beginning of the third stage. As the uterus is emptied, it retracts by drawing the uterine wall together; the membranes are thus thrown into wavy folds which are most marked close to the uterine surface or in the decidual layer. The crest of each of these folds in the decidua, tends to separate from the uterine wall, and a little hæmorrhage follows, which still further separates the membranes. This, however, is only capable of carrying the separation a certain distance, and the process has to be completed by the traction of the placenta which drags the membranes after it as it descends.

We have here a fair statement of the problem before us. The mechanism varies according to where the placenta is situated on the uterine wall, its extent, the existence of pathological adhesions, the uniformity of uterine contraction, the relative strength of the union between amnion and chorion as compared with that between chorion, decidua and uterine wall.

In concluding his introduction, Dr. Cameron hoped the discussion would be narrowed down to the two following questions: (1) Are drugs of any value, do they help us in the management of the third stage of labor, if so what are they? What are their indications and contra-indications? (2) Are manipulations of service; if so, what manipulations and when are they of use? What are their indications and their contra-indications?

Dr. H. L. REDDY then took up the drugs used in the third stage of labour, his paper on the subject will be published next month.

Dr. A. A. BROWNE took up the manipulative processes which might be required in management of the third stage. These were (1) Manual expression of the placenta by the hand externally, and (2) Removal of retained placenta by the hand in utero. He thought that after the child was born and the cord tied, gentle pressure should be made, the uterus followed down as it contracted, while the patient was allowed to rest and the placenta to become separated. In an absolutely normal labor the uterus would expel the placenta without further assistance in from 15 to 20 minutes; if it did not, expression was done probably best by the method of Credé. This is carried out in the following manner: The uterus should be grasped in the hollow of the left hand the ulnar edge being well pressed down behind the fundus, and when it was felt to harden strong and firm pressure should be made downward and backwards in the axis of the pelvic brim. If the first attempt were unsuccessful the manœuvre should be repeated at the next contraction, and on a second failure a vaginal examination made and the placenta, if found lying wholly in the vagina, withdrawn. If, however, it were still in the uterine cavity, he would again attempt to expel it by pressure and not by traction on the cord. The membranes were best removed by twisting and gentle traction.

Dr. Browne divided retained placenta into two kinds: (1) Simple and (2) where due to morbid adhesions. The former might be caused by inertia, large size of the placenta, hour-glass contraction, traction on the cord, or ergot. The latter was due to endometritis before or metritis or placentitis during pregnancy.

He recommended introducing the hand into the uterus with strict antiseptic precautions, and separating the placenta gently with the ulnar side of the hand, making a to and fro motion, the back of the hand being towards the uterine wall. On any portions not coming away, they

might be peeled off by using the finger nail as a curette, but in many cases it was quite impossible to get all removed without using undue violence. Then it was better to give intra-uterine douches of hydrargyrum perchloride, followed by carbolic or creolin, and allow it come away by necrosis.

In conclusion, Dr. Browne spoke very strongly against the following methods of removing the placenta :—1. Dragging on the cord. 2. Forcible dragging out of the placenta by the hand in utero.

Dr. F. W. CAMPBELL even after hearing the previous speakers believed that his own experience of 32 years was as reliable as any knowledge he could acquire from the text books of to-day. He thought that the uterus itself by contraction and retraction expelled the placenta and had often found a cough or the application of a binder very useful. He desired to enter the strongest possible protest against the modern practice of employing chloroform. A few drops on a towel sufficient to partially stupify might be an advantage, but few women would be content with this, and very little more produced unconsciousness, with entire cessation of uterine contractions. Moreover, he believed it to be invariably followed by a tendency to hæmorrhage and he never gave it except when compelled to do so, and then only when the head had been pressing on the perineum for some little time. Quinine in full doses decidedly increased uterine contractions. As styptics, he preferred vinegar, ice, or hot water. With regard to the expulsion of the placenta, ten minutes he thought had been the average in his own cases, where he used manipulation, and traction when the placenta was in the vagina. He quoted Sir James Simpson's rules. Dr. Campbell separated an adherent placenta with the front of the hand towards the uterus instead of the reverse, as recommended by Dr. A. A. Browne.

Dr. G. A. BROWN used chloroform in the vast majority of his cases in the latter part of the second stage. It was contra-indicated in those who were anæmic, who suffered

from chronic uterine trouble, and who had weak pains and flabby tissues, as then it was apt to be followed by hæmorrhage after the expulsion of the placenta. He was inclined to think that during the third stage ether given by means of the Clover inhaler was preferable. Owing to the time necessary for absorption he now gave ergot immediately after the birth of the child instead of at the end of the third stage, and cited three cases in which a post-partum hæmorrhage occurring with the latter method in previous labours had been prevented at subsequent ones. He believed that if the accoucheur took the precaution of completely emptying the uterus, styptics could be to a great degree dispensed with; when necessary, he used hot water or the insertion of a piece of alum. He strongly objected to perchloride of iron, as it greatly increased the danger of sepsis. As a stimulant after excessive hæmorrhage, he used strych. nitrate gr. $\frac{1}{60}$ hypodermically. He considered Crede's the only scientific method for expulsion of the placenta and in cases of retension followed the plan adopted by Dr. A. A. Browne.

Dr. LAPTHORN SMITH strongly advocated the use of anæsthetics and employed the A. C. E. mixture, giving the bottle to the patient and instructing her to sprinkle a few drops on a handkerchief and inhale it as she required it. In this way the patient never became entirely unconscious, and the employment of the anæsthetic did not necessitate calling in another physician. He admitted that it prolonged labour and increased the tendency to post-partum hæmorrhage, but he felt no anxiety on this score, while he possessed the fluid extract of ergot, which he administered in hot water immediately after the birth of the child, to prevent it. He also believed strongly in quinine and strychnia for increasing and maintaining the tonicity of the uterus. The latter he gave, where possible, for a month previous to labour.

Dr. PROUDFOOT referred to the use of laudanum in labour, it diminished pain, acted as a strong tonic and prevented post-partum hæmorrhage.

Dr. ENGLAND endorsed Dr. G. A. Brown's method of giving ergot. He thought that in some cases the drug was not absorbed by the stomach, and therefore dependence should not be placed solely upon it. Chloroform, in his experience, in suitable cases accelerated rather than delayed delivery. He differed from Dr. A. A. Browne in his method of detaching a retained placenta keeping the pulp of his fingers towards the uterine wall, because he believed there was less danger of damaging it thus. As a styptic he considered the hand in the uterine cavity the best means of bringing about contractions, and after this injections of hot water.

Dr. A. A. BROWNE, replying to Drs. England and Campbell, said that if an adherent placenta were detached from above, their method would be most convenient. He, however, spoke of detaching it from below and working upwards, in which case he believed the best way was to have the back of the fingers towards the uterine wall and the pulp towards substance of the placenta, which was separated by a to and fro movement.

Dr. J. C. CAMERON, in closing the discussion, explained that in making the arrangements for dealing with the subject, different parts had been allotted to different speakers, and those to whose lot it had fallen to treat of the nervous aspect of the subject, had been unable to attend. He had no hesitation in putting himself on record as favouring the use of anæsthetics in the latter part of the second stage when the head was down on, and bulging, the perineum. It then not only relieved the pain, but rendered laceration less likely. He, however, would only use it to the obstetrical degree. Speaking of the employment of ergot, he said his own custom was to give it after the birth of the placenta ; but he saw no very great objection to giving it earlier in some cases, (that is, after the birth of the child) especially when absorption is thought to be slow. It is a good rule not to give ergot until the uterus is empty, or can certainly be emptied in half an hour. In regard to this slowness of

absorption, he thought we would not hear so much about the worthlessness of ergot, if more care were to be taken to keep the patient's stomach reasonably empty. It is not at all hard to understand why the drug has no effect in some cases, when we consider the mass of stuff, in the way of food and drink, with which some patients load themselves during labour. As a prophylactic against post-partum hæmorrhage, there were two classes of cases in which ergot should always be given (1) in *precipitate* labor, where the uterus acts in an hysterical sort of way, the uterine muscle not having attained its rythmic power, and where relaxation and flooding are apt to set in as suddenly and acutely as the contractions did previously ; (2) *prolonged* labor, when the uterine muscle is apt to become exhausted, and the relaxation results from weakness. If you wish to be sure of getting the full effect of ergot, it should be given hypodermically, because when given by the mouth its action is apt to be slow. Speaking of the spontaneous delivery of the placenta, he thought some seeming contradictions which had arisen during the discussion might be easily explained by a consideration of a few of the factors which play a part in the act. When the placenta is in the upper part of the uterus, the uterine muscle or the hand of the operator may serve to force it downwards ; but directly it reaches the lower uterine segment, the action of these forces is much lessened. Its further progress depends then upon gravity, supplemented by the contraction of the voluntary abdominal muscles. It was through the action of these last that the cough, so favourably mentioned by Dr. F. W. Campbell, obtained its potency. So also the abdominal binder, by strengthening the lax abdominal wall steadied the uterus, and allowed it to act in a direct line, hence increasing its expulsive powers. A uterus wabbling about in a lax abdomen, could not be acted on so effectually by the abdominal muscles, as one that is steadied and kept in its proper place. Referring to traction on the cord, he said, of course when we are positive the placenta

is in the vagina, no possible harm could arise from gentle traction on the cord ; but it is the possibility of making a mistake in this regard that is dangerous, and he believed that a placenta which was still in the uterine cavity might sometimes be erroneously thought to be in the vagina, and the traction upon the cord would be a mischievous practice. Of the danger of drawing on the cord while the placenta was still attached to the uterine wall, he need not speak ; and in no case should any but the gentlest traction ever be employed. As to cases of retained placenta, he believed that most of our cases of retention occurred in the early days of our practice; and as experience ripens, they become rarer. Retention is very often caused by undue haste in trying to expel the placenta, or to improper manipulation. Referring to the method of dissecting off the placenta, it seemed to him that the one mentioned by Dr. A. A. Browne was the right one. A careful dissector always dissected towards the debris, and from the tissue he wished to save, in like manner a careful obstetrician should work from the uterine wall which he wants to save towards the placenta which he does not care to save. Then as to the difficulty experienced in separating and removing the placenta, he believed it was due to the fact that the operator did not commence his work in the right place. He should remember that the line of cleavage is in the decidual plane, and to reach this it is necessary to get down to the uterine muscle. Most men commence the operation of digital separation by following the cord. This brought them, of course, in contact with the fœtal surface of the placenta, and the only way to separate it easily from this point was to push the fingers right through it until the uterine wall itself was reached, and then commence the " peeling off" process. It would be better to begin at the edge of the placenta rather than at the attachment of the cord, or better still, to follow up the membranes, which it will be remembered were separated from the lower uterine segment during the first stage of labour. By passing the finger beneath them, the edge (not the centre as in the

case of following the cord) of the placenta may be reached in the plane of natural cleavage, and then the process of peeling off will be comparatively easy. If these points were kept in mind, he believed the breaking up of the placenta into pieces during its removal, with the consequent danger of leaving some bits behind, would not so often occur. Coming then to the expression of the placenta, and the question of how long should we wait before doing so? It should be remembered *why* we wait. We wait to give the uterus time to separate the placenta. To do this requires pains; and the number will depend on their strength. A man's clinical experience, therefore, upon feeling the uterus, should always inform him where the placenta is, and when and how he should interfere. Above all, manipulation should not be applied to "separate" the placenta, but to expel it, unless the uterus is incapable, or the placenta abnormally adherent. A little thought, and a thorough knowledge of what we are doing, was all the speaker believed necessary to guide one in such cases. As to the position of the patient in expelling the placenta, he preferred the dorsal; the lateral allowed the uterus to topple to one side and pressure cannot be applied so correctly in the axis of the pelvis. The Crede method of manipulation is by all means the best method; but it is not so generally practised as one would think; many only imagine they are using it, while only the few really fulfil all its conditions. The fingers should be got well behind and thumbs in front of the uterus, grasping and compressing the fundus. before downward pressure is made. If you simply press upon the organ, as a whole, without compressing the fundus, you will only flatten out the fundus and fail to move the placenta. Speaking then more particularly of the membranes, he remarked that if they are ruptured too early, separation from the lower uterine segment does not wholly take place, owing to the dilatation of the cervix being completed by the head of the child; they are then likely to remain attached even after the delivery of the

placenta. In such a case the fingers should be passed up, to separate them from around the internal os, taking care that all are removed. In closing, Dr. Cameron made an appeal for gentle manipulation of the uterus during the third stage, saying it was one thing to support, another to injure the fundus; and that a great deal of harm was often done by rough handling of the uterus and its peritoneal covering.

Selections.

The Cause of Migraine.—There is probably no functional disorder which has given physicians more annoyance and less satisfaction in its treatment by the application of therapeutic agents than migraine. Antipyrin, antefebrin, phenacitin, acetanilid, and other recently discovered members of the aromatic series of coal-tar products have afforded very little palliation in this class of cases; for every physician who has had much experience in the treatment of migraine knows, to his sorrow, that the apparently beneficial effects of these drugs are very transient indeed. Most of them are capable of affording relief only for two or three times, and all ultimately fail to palliate suffering except by the use of doses so large as to be absolutely dangerous through their depressing effects upon the heart.

The immediate cause of pain in migraine is a question which has been the subject of much discussion. Dr. Bois-Raymond, who was himself a serious sufferer from migraine, regarded it as due to spasms of the muscular coats of the vessels, the result of the disturbance of the sympathetic. He located the disease in the cervical sympathetic; and evidence of the correctness of his theory is to be found in the cord-like feeling of the temporal arteries during an attack of this disease. But Guttmann has recently reported cases in which the vessels of the affected parts are relaxed, passive congestion being present.

It is thus apparent that the pain may result from both causes. In the first class of cases it is doubtless due to pressure of the contracting muscles of the vessel walls upon the nerves ramifying among their fibres; while in the second class of cases it results from the pressure of the distended vessels upon nerves lying outside of them. The inportant point for consideration is, what is the ulti-

mate cause of migraine? The transient and irregular appearance of the disease affords evidence that it is not to any organic change either in the sympathetic or any other portion of the nervous system, but must be the result of some temporary cause which is irregular in its operation.

The researches of Glenard during the last twelve years have thrown much light upon this most interesting subject. Glenard, Trastour, Dujardin-Beaumetz and other eminent French investigators have repeatedly pointed out the fact that prolapse of the stomach, intestines, liver, kidneys and other abdominal viscera is a most active and frequent cause of vaso-motor and sympathetic disturbances of the most varied character. Trastour has called attention to the fact that migraine is a prominent feature of cases of enteroptosis. Within the last four or five years the writer has made careful note of the physical condition of the abdominal viscera in cases of migraine, and has been able to verify the observations of Glenard and Trastour in almost every case.

Dilatation of the stomach, prolapse of the stomach, in most cases also prolapse of the bowels, and not infrequently prolapse of the right kidney have been found; and the existence of an extremely hyperæsthetic condition of the lumbar ganglia of the abdominal sympathetic, associated with static disturbances referred to, have seemed to be amply sufficient to account for the attacks of migraine. In a considerable proportion of cases, when the patient has spoken of recent suffering from migraine upon one side of the head, we have been able, without questioning the patient, to determine the side upon which the attack occurred, by a simple examination of the abdominal sympathetic. If the left lumbar ganglion was found to be most sensitive, the patient almost invariably testified to having had a recent attack of migraine upon the left side of the head. When both ganglia have been found very sensitive, and equally so, patients subject to migraine described the disease as either beginning upon one side and

rapidly extending to the other, or occurring simultaneously upon both sides of the head. We feel confident that this disease is not confined to the cervical sympathetic, as suggested by Du Bois-Raymond, but that the primary seat of the malady is the abdominal sympathetic; hence remedies, to be of permanent utility, must be addressed to the abnormal hyperæsthesia of the abdominal sympathetic which will be found to exist in every case of this sort.

The question next arises, what is the cause of this extraordinary hyperæsthesia of the abdominal sympathetic? One cause has already been referred to, viz., prolapse of the abdominal viscera, resulting in a mechanical strain upon the abdominal sympathetic through stretching of the nerve branches distributed to the viscera, thus dragging upon and irrtating the nerve centres in which they originate. This cause might be considered amply sufficient; but that something more is necessary is evidenced by the fact that although the enteroptosis and the strain occasioned by gravity is continuous, the patient suffers only occasionally from severe attacks of migraine, sometimes only at intervals of a month or two, at other times at intervals of one or two weeks or a few days, although we have occasionally encountered cases where it was of daily occurrence

The hyperæsthesia of the abdominal sympathetic is, then, only a predisposing cause of migraine; an exciting cause must be superadded. This, in the opinion of the writer, is most frequently toxæmia, resulting from the retention of the stomach contents, and decomposition resulting in the production of ptomaines or other toxines which, when absorbed into the blood, irritate to an excessive degree the already over-excited sympathetic, and thereby set up a morbid reflex action, which results in an attack of migraine or nervous headache.

The patient most frequently attributes the attack to over-work. The clergyman complains of having nervous headache on Monday morning after his Sunday sermon. Ladies frequently complain of an attack of headache fol-

lowing an unusually severe round of social duties. Other similar causes are assigned. A careful study of these cases, however, shows that, associated with the over-work, there will always be found symptoms of indigestion; and if not apparent to the patient, the condition of the stomach readily becomes apparent by the administration of a test breakfast and a careful analysis of the stomach fluid by the quantitative method. We have never failed to find in these cases either a high degree of acid fermentation or an excessive quantity of neutral chloro-organic compounds. In both conditions the stomach contents contain a vast quantity of toxic substances which, when absorbed into the blood induce a veritable toxæmia. Intellectual activity is an exciting cause of the disease only through the fact that, by a morbid reflex downward, it increases the hyperæsthetic condition of the abdominal sympathetic, and at the same time retards the digestion; and so favours both the production of toxines, which are the direct cause of the disease, and the susceptibility of the sympathetic to the action of the poisonous substances.

Viewed from this standpoint, migraine is no longer a complex or mysterious malady, but simply a state of systemic poisoning, the origin of which is decomposition of food products in a dilated or prolapsed stomach which, through motor insufficiency, is unable to unload itself of its contents with sufficient promptness to prevent septic and putrefying processes. Hence the remedy is to be sought, not in the discovery of some drug which will temporarily paralyze the nervous sensibility, reduce blood pressure or raise it, as may be required in the individual case, but by the removal of the real cause of the disease. The writer believes that every case of migraine is capable of being radically cured. He has had the good fortune to restore several scores of patients suffering from this malady, by the following simple means:

1. Antiseptic dietary arranged very nearly in accordance with the well-known formula which Dujardin-Beaumetz has adopted.

2. The patient's stomach is washed out regularly and with such frequency as the severity of the case may require; usually the administration of lavage two or three times a week is amply sufficient, but in cases in which the attacks occur daily the lavage must be practised every day, and in some cases, for a short period, the stomach must be emptied and thoroughly washed twice a day. We find the best time for cleansing the stomach to be at night, five or six hours after the patient's last meal. This gives the stomach rest during the night, and relieves the kidneys of the labor of removing a vast quantity of toxic substances which, being absorbed in the blood, would seek an outlet through the kidneys, if they were allowed to remain in the stomach.

In addition to the above, tonic measures are employed by which the patient's general health is improved; galvanism, the sinusoidal current, fomentations and the moist abdominal bandage at night are employed as means for relieving the hyperæsthesia of the abdominal sympathetic. When considerable enteroptosis exists, a proper abdominal supporter is worn until the patient has, by gymnastics, massage and manual Swedish movements, acquired sufficient strength in the abdominal muscles to be independent of artificial support. The results of this method of treatment have been most gratifying, as the following case will illustrate:

A lady thirty-five years of age, who had suffered for ten or fifteen years from frequent attacks of migraine, came under the writer's care about a year and a half ago in a condition of extreme weakness and exhaustion, the result of daily attacks of migraine of the most violent character, these having gradually increased in frequency, until, from occurring monthly, they came to be almost constant. The patient was, in fact, at no time entirely free from pain. The test breakfast gave the following result:

Total acidity	(M M of HCl)	.216
Total chlorine	" "	.312
Free HCl	" "	.048
Combined chlorine	" "	.168
Coefficient (normal .86)	" "	1.000
Acidity due to normal elements (free HCl. and combined chlorine.		.192

From the above figures it was evident that the patient was suffering from acid fermentation. This, in fact, was the only pathological condition present. Physical examination showed dilatation of the stomach, which was doubtless the cause of the acid fermentation, from the food being too long retained in the stomach.

Lavage was ordered daily; an antiseptic diet was prescribed, together with lavage and other measures in accordance with the plan we have outlined; and the result was that the patient's attacks ceased almost immediately. Only one or two slight ones occurred after the beginning of the treatment, and these were quickly checked by the administration of lavage. The patient made an excellent recovery, although it has been necessary for her to continue the use of the stomach tube at intervals, as the result of digressions in diet, as she has marked dilatation of the stomach and extreme enteroptosis.

The second examination of the stomach fluid, made seventeen days after the first, gave the following result:

Total acidity	.260
Total chlorine	.372
Free HCl	.012
Combined chlorine	.292
Coefficient	.840
Acidity due to the normal elements	.268

This analysis shows a very close approach to the normal condition. The normal coefficient being .86, it is evident that the acid fermentation has been suppressed, and the chemical test showed lactic acid to be absent.

The free HCl. is diminished, but this is more than compensated for in the increased amount of combined chlorine. The figures show a slight degree of hyperpepsia, but this is due to the increase in combined chlorine rather than to an excessive amount of free HCl.; and as the product is normal in character, as shown by the practically normal coefficient, the condition could scarcely be considered as pathological, but rather as an exaggerated normal state—what might be termed a physiological hyperpepsia, the result of which was a rapid gain of blood and tissue change,

which improved the patient greatly within a very short time.

Some physicians may be glad of the suggestion that most attacks of migraine may be cut short almost immediately by the administration of a thorough stomach washing. If the lavage is applied as soon as the first symptoms make their appearance, the attack may be aborted with almost absolute certainty. If, however, it has had a start of several hours, the most that can be expected is a mitigation of the symptoms and a very considerable abbreviation of the duration of the headache. We have frequently noted the curious fact that patients suffering from migraine are greatly relieved by lavage, even when the stomach seems to be entirely empty, or to contain nothing but a quantity of mucus with a sour or rancid odor.

In some unusually rebellious cases we have found the use of the following simple antiseptic remedy of value: Three parts of charcoal (preferably wheat charcoal), one of sulphur, and one-half part of salicylate of bismuth, taken in drachm doses. The recently introduced sub-gallate of bismuth, in five to ten grain doses, taken either just before or just after eating, has also proven a very efficient remedy.—*La Modern Medecine.*

THE

Montreal Medical Journal.

VOL. XXIII. JANUARY, 1895. No. 7.

THE MEDICAL FACULTY OF McGILL UNIVERSITY

The formal opening of the new buildings of the Medical Faculty of McGill University will take place on Tuesday, January the 8th. The Governor-General has very kindly consented to be present at the ceremony. Dr. William Osler will deliver an address.

A cordial invitation is extended to all members of the profession to be present at what promises to be a very interesting ceremony.

Four hundred students are enregistered in the Medical Faculty, an increase of 50, as compared with the session of 1893 and 1894. This marked increase, considering that the sessions have been extended to nine months, must be taken as evidence that students are now more than ever alive to the necessity of preparing themselves thoroughly for their professional work. The marked increase in the number of medical students entering McGill University during the past two or three years is, we believe, mainly owing to a general recognition of the necessity of an extended practical training in all branches of the medical curriculum. This McGill, through the wise generosity of her benefactors, is able to offer. The laboratory and hospital facilities for carrying this out are very complete. There are now well furnished laboratories for Chemistry, Physiology, Pathology, Histology, Pharmacology and Hygiene.

The hospital advantages leave nothing to be desired.

THE DIPHTHERIA ANTOXIN.

The marked attention now given to the treatment of diphtheria by means of the diphtheria antoxin will soon make clear to what extent it is useful. From all sides reports are coming which on the whole are favourable. The latest which we have access to is published in *Le Progrès Médical* for the 22nd of December last. It is on account of the cases of diphtheria treated in the Children's and Trousseau hospitals of Paris. The serum therapeutics was begun in the former institution on the 1st of February last and in the latter on the 13th of September. In all 1,027 cases were admitted, of whom 203 died, a mortality of 19.76 per cent. In the same institutions during the seven previous years the mortality ranged between 50.14 per cent. (1892) and 64.66 per cent. (1888) the average for the seven years being slightly above 57 per cent. The mortality under the older methods is almost exactly three times greater than under the new in the two great hospitals for children in Paris. It should be noted that the number of cases of diphtheria admitted to the above hospitals during the months of October and November, and treated by diphtheria antoxine was somewhat greater than the number in any of the corresponding months of the previous seven years, as the following table shows:

	Average of 7 yrs (1887 to 1893 incl.)	
	October. Old Treat.	November. Old Treat.
Number admitted	122	146
Number died	71	74
	October, 1894. New Treat.	November, 1894. New Treat.
Number admitted	228	192
Number died	30	35

We have also indicated the corresponding number of deaths in the two periods.

It is clear, we believe, that even making a due allowance for the increased number of presumably lighter cases treated in October and November, 1894, that the treatment by the new method was found to be of decidediy greater value than the old.

It is, however, as yet too early to speak with any definiteness on this point. We will not have to wait long before the question of the value or otherwise will be thoroughly tried and decided on. The great number of eager and able workers now in this field will soon place our knowledge on a firm basis. Let it be hoped that scientific medicine has added one more strong barrier to the ravages of a cruel disease.

AN UNJUST TAX.

We believe that the Canadian Government stands alone among the Governments of the civilized world in exacting a duty on the diphtheritic anti-toxine. It is difficult to understand the short-sighted policy of instituting such a tax. We are informed that a few of the first importations of the diphtheritic anti-toxine were admitted free, but that the officious officials decided that a duty of 50 per cent. should be levied in future.

It is to be hoped that this and similar unjust taxes will soon be done away with. Now that the Cabinet have a medical man among their number this hope may be realized. The taxing, and that heavily, of nearly all instruments, appliances and apparatuses used in the investigation and treatment of disease is a matter that has been repeatedly brought to the notice of the Canadian Government, but without any result, Such a tax is a great hindrance to the advance of the profession. It is not only felt by practitioners in their private work, but also by hospitals. Ali suffer—the rich as well as the poor.

Obituary.

VERNON S. HALLIDAY, M.D.

It is with regret that we chronicle the untimely death of Dr. Vernon Halliday, in the 25th year of his age. He was pursuing his studies in New York when he was taken ill with diphtheria. He was removed to the Willard Parker Hospital and was treated by the new anti-toxin with apparent success, for he rapidly became convalescent from the illness, but on November 26th he was stricken with paralysis of the heart and died instantly.

The deceased graduated from the Medical Faculty of McGill University in 1892 and for a short time acted as house surgeon in the Montreal General Hospital. Finding that practice in his native town of Peterboro did not agree with his health he went to New York and at the time of his death had been prosecuting his studies in some of the special branches.

He was greatly esteemed by all his fellow-students and both in class-room and campus was always a prominent figure. By his death a most promising career has been cut short.

Personal.

Drs. W. H. B. Aikin, A. B. Atherton, J. Ferguson, J. H. Burns, A. A. Macdonald and Geo. Sterling Ryerson have severed their connection with the *Dominion Medical Monthly.*

Medical Items.

—Prof. Kohlrausch, of Strasburg, has been appointed successor to the late Prof. Helmholtz

—Dr. Withers Moore, of Brighton, and ex-president of the British Medical Association, died on the 5th ult.

—We regret to have to record the death of Dr. Duquette, Medical Superintendent of the Longue Pointe Asylum.

—Dr. John Chapman, for many years a prominent medical man in the English eolony of Paris has passed away. He is best known as the introducer in practice of the spinal ice and hot water bags.

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A MONTHLY JOURNAL OF MEDICINE AND SURGERY.

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163 Mansfield Street, Montreal.

Subscription price, including postage, $2.00 per annum, in advance. Single copies, 25c.

The volume commences with the July number, but subscriptions may begin at any time.

Address

THE MONTREAL MEDICAL JOURNAL CO.,
Care of GAZETTE PRINTING CO.,
MONTREAL

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXIII. FEBRUARY, 1895. No. 8.

Original Communications.

TEACHING AND THINKING.*

THE TWO FUNCTIONS OF A MEDICAL SCHOOL.

Many things have been urged against our nineteenth century civilization—that political enfranchisement only ends in anarchy, that the widespread unrest in matters spiritual leads only to unbelief, and that the best commentary on our boasted enlightenment is the picture of Europe in arms and the nations everywhere gnarring at each other's heels. Of the practical progress in one direction, however, there can be no doubt; no one can dispute, viz., the enormous increase in the comfort of each individual life. Collectively the human race, or portions of it at any rate, may have in the past enjoyed periods of greater repose, and longer intervals of freedom from strife and anxiety; but the day has never been when the unit has been of such value, when the man, and the man alone, has been so much the measure, when the individual as a living organism has seemed so sacred, when the obligations to regard his rights have seemed so imperative. But these changes are as naught in comparison with the remarkable increase in his physical well-being. The bitter cry of Isaiah that with the multiplication of the nations their joys had not been increased, still

* Remarks made at the opening of the new building of the Medical Faculty McGill College. by William Osler, M.D., F.R.C.P., Lond., Professor of Medicine Johns Hopkins University, Baltimore.

echoes in our ears. The sorrows and troubles of men, it is true, may not have been materially diminished, but bodily pain and suffering, though not abolished, have been assuaged as never before, and the share of each in the *Weltschmerz* has been enormously lessened.

Sorrows and griefs are companions sure sooner or later to join us on our pilgrimage, and we have become perhaps more sensitive to them, and perhaps less amenable to the old time remedies of the physicians of the soul; but the pains and woes of the body, to which we doctors minister, are decreasing at an extraordinary rate, and in a way that makes one fairly gasp in hopeful anticipation.

In his *Grammar of Assent*, in a notable passage on suffering, John Henry Newman asks, "Who can weigh and measure the aggregate of pain which this one generation has endured, and will endure, from birth to death? Then add to this all the pain which has fallen and will fall upon our race through centuries past and to come." But take the other view of it—think of the Nemesis which has overtaken pain during the past fifty years! Anæsthetics and antiseptic surgery have almost manacled the demon, and since their introduction the aggregate of pain which has been prevented far outweighs in civilized communities that which has been suffered. Even the curse of travail has been lifted from the soul of woman.

The greatest art is in the concealment of art, and I may say that we of the medical profession excel in this respect. You of the public who hear me go about the duties of the day profoundly indifferent to the facts I have just mentioned. You do not know, many of you do not care, that for the cross-legged Juno who presided over the arrival of your grandparents, there now sits a benign and straight-legged goddess. You take it for granted that if a shoulder is dislocated there is chloroform and a delicious Nepenthe instead of the agony of the pulleys and paraphernalia of fifty years ago. You accept with a selfish complacency, as if you were yourselves to be thanked for it, that the arrows

of destruction fly not so thickly, and that the pestilence now rarely walketh in the darkness; still less do you realize that you may now pray the prayer of Hezekiah with a reasonable prospect of its fulfillment, since modern science has made to almost everyone of you the present of a few years.

I say you do not know these things. You hear of them, and the more intelligent among you perhaps ponder them in your hearts, but they are among the things which you take for granted, like the sunshine, and the flowers, and the glorious heavens.

'Tis no idle challenge which we physicians throw out to the world when we claim that our mission is of the highest and of the noblest kind, not alone in curing disease but in educating the people in the laws of health, and in preventing the spread of plagues and pestilences; nor can it be gainsaid that of late years our record as a body has been more encouraging in its practical results than those of the other learned professions. Not that we all live up to the highest ideals, far from it—we are only men. But we have ideals, which means much, and they are realizable, which means more. Of course there are Gehazis among us who serve for shekels, whose ears hear only the lowing of the oxen and the jingling of the guineas, but these are exceptions, and the rank and file labour earnestly for your good, and self-sacrificing devotion to your interests animates our best work.

The exercises in which we are to-day engaged form an incident in this beneficent work which is in progress everywhere; an incident which will enable me to dwell upon certain aspects of the university as a factor in the promotion of the physical well-being of the race.

A great university has a dual function, to teach and to think. The educational aspects at first absorb all its energies, and in the equipment of the various departments and in providing salaries, it finds itself hard pressed to fulfil even the first of these duties. The Dean has told us

the story of the progress of the medical school of this institution, which illustrates the struggles and difficulties, the worries and vexations attendant upon the effort to place it in the first rank as a teaching body. I know them well, since I was in the thick of them for ten years, and see today the realization of many of my day-dreams. Indeed in my wildest flights I never thought to see such a splendid group of buildings as I have just inspected. We were modest in those days, and I remember when Dr. Howard showed me in great confidence the letter of the Chancellor, in which he conveyed his first generous bequest to the Faculty, it seemed so great t' at in my joy I was almost ready to sing my *Nunc dimittis*. The great advances, here at the Montreal General Hospital and at the Royal Victoria (both of which institutions form most essential parts of the medical schools of this city) mean increased teaching facilities, and of necessity better equipped graduates, better equipped doctors! Here is the kernel of the whole matter, and it is for this that we ask the aid necessary to build large laboratories and larger hospitals in which the student may learn the science and art of medicine. Chemistry, anatomy and physiology give that perspective which enables him to place man and his diseases in their proper position in the scheme of life, and afford at the same time that essential basis upon which alone a trustworthy experience may be built. Each one of these is a science in itself, complicated and difficult, demanding much time and labour for its acquisition, so that in the few years which are given to their study the student can only master the principles and certain of the facts upon which they are founded. Only so far as they bear upon a due understanding of the phenomena of disease do these subjects form part of the medical curriculum, and for us they are but means—essential means it is true—to this end. A man cannot become a competent surgeon without a full knowledge of human anatomy and physiology, and the physician without physiology and chemistry flounders along in an aimless fashion, never able to gain any accurate conception

of disease, practising a sort of pop-gun pharmacy, hitting now the malady and again the patient, he himself not knowing which.

The primary function of this department of the university is to teach men disease, what it is, its manifestations, how it may be prevented, and how it may be cured; and to learn these things the four hundred young men who sit on these benches have come from all parts of the land. But it is no light responsibility which a faculty assumes in this matter. The task is not easy, being beset with countless difficulties, some inherent in the subject, others inherent in the men themselves, and not a few bound up with the "fool multitude" among which we doctors work.

The processes of disease are so complex that it is excessively difficult to search out the laws which control them, and although we have seen a complete revolution in our ideas, what has been accomplished by the new school of medicine is only an earnest of what the future has in store. The three great advances of the century have been a knowledge of the mode of controlling epidemic diseases, the introduction of anæsthetics, and the adoption of antiseptic methods in surgery. Beside them all others sink into insignificance, as these three contribute so enormously to the personal comfort of the individual. The study of the causes of so-called infectious disorders has led directly to the discovery of the methods for their control, for example, such a scourge as typhoid fever becomes almost unknown in the presence of perfect drainage and an uncontaminated water supply. The outlook, too, for specific methods of treatment in these affections is most hopeful. The public must not be discouraged by a few, or even by many failures. The thinkers who are doing the work for you are on the right path, and it is no vain fancy that before the twentieth century is very old there may be effective vaccines against many of the contagious diseases.

But a shrewd old fellow remarked to me the other day, "Yes, many diseases are less frequent, others have disap-

peared, but new ones are always cropping up, and I notice that with it all there is not only no decrease, but a very great increase in the number of doctors."

The total abolition of the infectious group we cannot expect, and for many years to come there will remain hosts of bodily ills, even among preventable maladies, to occupy our labours; but there are two reasons which explain the relative numerical increase in the profession in spite of the great decrease in the number of certain diseases. The development of specialties has given employment to many extra men who now do much of the work of the old family practitioner, and again people employ doctors more frequently and so give occupation to many more than formerly.

It cannot be denied that we have learned more rapidly how to prevent than how to cure diseases, but with a definite outline of our ignorance we no longer live now in a fool's Paradise, and fondly imagine that in all cases we control the issues of life and death with our pills and potions. It took the profession many generations to learn that fevers ran their course, influenced very little, if at all, by drugs, and the £60 which old Dover complained were spent in medicine in a case of ordinary fever about the middle of the last century is now better expended on a trained nurse, with infinitely less risk, and with infinitely greater comfort to the patient. Of the difficulties inherent in the art not one is so serious as this which relates to the cure of disease by drugs. There is so much uncertainty and discord even among the best authorities (upon non-essentials it is true) that I always feel the force of a well-known stanza in "Rabbi Ben Ezra," which, however, I could not quote in the tender ears of students.

One of the chief reasons for this uncertainty is the increasing variability in the manifestations of any one disease. As no two faces, so no two cases are alike in all respects, and unfortunately it is not only the disease itself which is so varied, but the subjects themselves have peculiarities which modify its action.

With the diminished reliance upon drugs, there has been a return with profit to the older measures of diet, exercise, baths, and frictions, the remedies with which the Bythenian Asclepiades doctored the Romans so successfully in the first century. Though used less frequently, medicines are now given with infinitely greater skill ; we know better their indications and contradictions, and we may safely say (reversing the proportion of fifty years ago) that for one damaged by dosing, one hundred are saved.

Many of the difficulties which surround the subject relate to the men who practice the art. The commonest as well as the saddest mistake is to mistake one's profession, and this we doctors do often enough, some of us without knowing it. There are men who have never had the preliminary education which would enable them to grasp the fundamental truths of the science on which medicine is based. Others have poor teachers, and never receive that bent of mind which is the all important factor in education ; others again fall early into the error of thinking that they know it all, and benefiting neither by their mistakes or their successes, miss the very essence of all experience, and die bigger fools, if possible, than when they started. There are only two sorts of doctors ; those who practice with their brains, and those who practice with their tongues. The studious, hard working man who wishes to know his profession thoroughly, who lives in the hospitals and dispensaries, and who strives to obtain a wide and philosophical conception of disease and its processes, often has a hard struggle, and it may take years of waiting before he becomes successful ; but such form the bulwarks of our ranks, and outweigh scores of the voluble Casios who talk themselves into, and often out of, practice.

Now of the difficulties bound up with the "fool multitude" in which we doctors work, I hesitate to speak in a mixed audience. Common sense in matters medical is rare, and is usually in inverse ratio to the degree of education. I suppose as a body, clergymen are better educated

than any other, yet they are notorious supporters of all the nostrums and humbuggery with which the daily and religious papers abound, and I find that the further away they have wandered from the decrees of the Council of Trent, the more apt are they to be steeped in thaumaturgic and Galenical superstition. But know also, man has an inborn craving for medicine. Generations of heroic dosing have given his tissues such a thirst that even young infants in the higher circles of society have been known to cry for certain drugs. As I once before remarked, the desire to take medicine is the one feature which distinguishes man, the animal, from his fellow creatures. It is really one of the most serious difficulties with which we have to contend. Even in minor ailments, which would yield to dieting or to simple home remedies, the doctor's visit is not thought to be complete without the prescription. And now that the pharmacists have cloaked even the most nauseous remedies, the temptation is to use medicine on every occasion, and I fear we may return to that state of polypharmacy, the emancipation from which has been the sole gift of Hahnemann and his followers to the race. As the public becomes more enlightened, and as we get more sense, dosing will be recognized as a very minor function in the practice of medicine in comparison with the old measures of Asclepiades.

After all, these difficulties—in the subject itself, in us, and in you—are lessening gradually, and we have the consolation of knowing that year by year the total amount of unnecessary suffering is decreasing at a rapid rate.

In teaching men what disease is, how it may be prevented, and how it may be cured, a University is fulfilling one of its very noblest functions. The wise instruction and the splendid example of such men as Holmes, Sutherland, Campbell, Howard, Ross, Macdonnell, and others have carried comfort into thousands of homes throughout this land. The benefits derived from the increased facilities for the teaching of medicine which have come with the great changes made here and at the hospitals during the past

few years, will not be confined to the citizens of this town, but will be widely diffused and felt in every locality to which the graduates of this school may go ; and every gift which promotes higher medical education, and which enables the medical faculties throughout the country to turn out better doctors, means fewer mistakes in diagnosis, greater skill in dealing with emergencies, and the saving of pain and anxiety to countless sufferers and their friends.

The physician needs a clear head and a kind heart ; his work is arduous and complex, requiring the exercise of the very highest faculties of the mind, while constantly appealing to the emotions and finer feelings. At no time has his influence been more potent, at no time has he been so powerful a factor for good, and as it is one of the highest possible duties of a great University to fit men for this calling, so it will be your highest mission, students of medicine, to carry on the never-ending warfare against disease and death, better equipped, abler men than your predecessors, but animated with their spirit and sustained by their hopes, " for the hope of every creature is the banner that we bear."

The other function of a University is to think. Teaching current knowledge in all departments, teaching the steps by which the *status præsens* has been reached, and teaching how to teach, form the routine work of the various college faculties, which may be done in a perfunctory manner by men who have never gone deeply enough into their subjects to know that really thinking about them is in any way important. What I mean by the thinking function of a University, is that duty which the professional corps owes to enlarge the boundaries of human knowledge. Work of this sort makes a University great, and alone enables it to exercise a wide influence on the minds of men.

We stand to-day at a critical point in the history of this faculty. The equipment for teaching, to supply which has taken years of hard struggle, is approaching completion, and with the co-operation of the General and the Royal

Victoria Hospitals students can obtain in all branches a thorough training. We have now reached a position in which the higher university work may at any rate be discussed, and towards it progress in the future must trend. It may seem to be discouraging, after so much has been done and so much has been so generously given, to say that there remains a most important function to foster and sustain, but this aspect of the question must be considered when a school has reached a certain stage of development. In a progressive institution the changes come slowly, the pace may not be perceived by those most concerned, except on such occasions as the present, which serve as landmarks in its evolution. The men and methods of the old Coté street school were better than those with which the faculty started; we and our ways at the new building on University street were better than those of Coté street; and now you of the present faculty teach and work much better than we did ten years ago. Everywhere the old order changeth, and happy those who can change with it. Too many, like the defeated gods in Keats' Hyperion, unable to receive the balm of the truth, resent the wise words of Oceanus (which I quoted here with very different feelings some eighteen years ago in an introductory lecture):

> "Still on our heels a fresh perfection treads,
> * * * * * born of us,
> Fated to excel us."

Now the fresh perfection which will tread on our heels will come with the opportunities for higher university work. Let me indicate in a few words its scope and aims. Teachers who teach current knowledge are not necessarily investigators; many have not had the needful training; others have not the needful time. The very best instructor for students may have no conception of the higher lines of work in his branch, and contrariwise, how many brilliant investigators have been wretched teachers? In a school which has reached this stage and wishes to do thinking as well as teaching, men must be selected who are not only thoroughly *au courant* with the best work in their depart-

ment the world over, but who also have ideas, with ambition and energy to put them into force,—men who can add, each one in his sphere, to the store of the world's knowledge. Men of this stamp alone confer greatness upon a university. They should be sought for far and wide; an institution which wraps itself in Strabo's cloak and does not look beyond the college gates in selecting professors may get good teachers, but rarely good thinkers.

One of the chief difficulties in the way of advanced work is the stress of routine class and laboratory duties, which often saps the energies of men capable of higher things. There are two essential provisions, first, to give the professors plenty of assistance, so that they will not be worn out with teaching; and, second, to give encouragement to graduates and others to carry on researches under their direction. With a system of fellowships and research scholarships a university may have a body of able young men, who on the outposts of knowledge are exploring, surveying, defining and correcting. Their work is the outward and visible sign that a university is thinking. Surrounded by a group of bright young minds, well trained in advanced methods, not only is the professor himself stimulated to do his best work, but he has to keep far afield and to know what is stirring in every part of his own domain.

With the wise co-operation of the university and the hospital authorities Montreal should become the Edinburgh of America, a great medical centre to which men will flock for sound learning, whose laboratories will attract the ablest students, and whose teaching will go out into all lands, universally recognized as of the highest and of the best type.

Nowhere is the outlook more encouraging than at McGill. What a guarantee for the future does the progress of the past decade afford! No city on this continent has so liberally endowed higher education. There remains now to foster that undefinable something which, for want

of a better term, we call the university spirit, a something which a rich institution may not have, and with which a poor one may be saturated, a something which is associated with men and not with money, which cannot be purchased in the market or grown to order, but which comes insensibly with loyal devotion to duty and to high ideals, and without which *Nehushtan* is written on its portals.

THE DRUGS USED IN THE THIRD STAGE OF LABOUR.*

By HERBERT L. REDDY, M.D.,

Professor of Obstetrics, University of Bishop's College.

The part assigned to me in to-night's discussion is the use of drugs, or rather the drugs used, in the third stage of labour.

I find that it is impossible to limit myself to the third stage in some cases; as, for example, chloroform, which is so commonly used in the second stage, and so frequently produces unpleasant effects in the third. Therefore, I hope you will pardon me if I take up your time, to some extent, in considering these drugs outside the stage under discussion.

I have endeavored to give the opinions of standard authorities, and have also taken the trouble to write to a number of the leading obstetricians in the United States, more particularly with regard to the use of ergot and chloroform, and have received replies to all of my enquiries. This, I think, will perhaps make what I have to say slightly more interesting.

The time allotted to me is, I am sorry to say, entirely too short to give more than a short resume of the subject. I, therefore, have only taken up for consideration the most commonly used drugs.

ANÆSTHETICS.

Firstly, what is the indication for them?

Relief of pain;
Relaxation of parts;
Prevention of untimely movements.

In looking up the matter we find Donhöff, in the Archives for Gynæcology, shows the influence of chloroform upon

* Read before the Medico-Chirurgical Society, Nov. 30th, 1894.

the course of normal labor by the tachadynamometer to be as follows:

The administration of chloroform, even in diminutive doses, exercises a retarding influence upon the progress of labour. Time prevents us taking up his experiments fully.

Playfair, the English standard authority, says:

"The tendency of the present day is to give too much anæsthetic during child-birth, and a common error is the administration of chloroform to an extent which materially interferes with uterine contractions, and predisposes to postpartum hæmorrhage. In considering anæsthesia in the third stage, or the effects produced in the third stage, the subject would not be complete without referring to its use in the earlier stage of labour. Generally speaking, we do not think of giving chloroform until the os is fully dilated, the head descending, and the pains becoming propulsive. It has often been administered earlier, in order to aid in the dilatation of a rigid cervix, and while it may succeed well, chloral answers the purpose better. There is one cardinal rule to be observed: in giving chloroform during the propulsive stage, it should be administered intermittently and not continuously. When the pain comes on a few drops may be scattered over a Skinner's inhaler. During the acme of the pain the patient inhales it freely, and at once experiences a sense of great relief. As soon as the pain dies away the inhaler should be removed. Indeed, if properly given, consciousness should not be entirely abolished, and the patient between the pains should be able to speak and understand what is said to her, or, in other words, the chloroform should be administered to the obstetric and not to the surgical or profound insensibility except, perhaps, just at the moment the head is passing over the perineum. The effect of the chloroform on the pains must be carefully watched. If they become materially lessened in force and frequency, it is necessary to stop the inhalation for a short time, until the pains get stronger. This effect may be often completely and easily prevented

by using Dr. Sanson's mixture, one-third absolute alcohol and two-thirds chloroform, this diminishing the tendency to undue relaxation. Bearing in mind the tendency of chloroform to produce uterine relaxation, more than ordinary precautions should always be taken against postpartum hæmorrhage, in all cases in which it has freely been administered. In cases of operative midwifery, it is usually given to the extent of complete anæsthesia, and in all such cases it should be given by another medical man, not by the operator."

Winkel believes that chloroform should not be used in all obstetrical operations, unless they are of a difficult nature, and believes the best method even here in order to avoid difficulties is to carry the anæsthesia only so far that the patient feels the pains at the completion of the operation and awakens with the crying of the child.

Dr. E. Montgomory, Philadelphia, makes it a rule to give an anæsthetic to every patient during the second stage of labour. The anæsthetic he uses is the bromide of methyl, which has the advantage over ether and chloroform that it acts quickly and its effects pass off quickly, thus producing less influence than either ether or chloroform. It is not necessary that the patient should be brought so profoundly under its influence as is necessary under chloroform. He says, "I have never found it to have any unpleasant influence upon the third stage of labour, as is claimed to arise from the use of chloroform."

Dr. Parvin uses anæsthetics possibly in one-third of his cases, usually ether. He finds that it blunts the sharp edge of the pain, the patient bears down better, and it lessens the resistance of the soft parts. He believes that it neither induces hæmorrhage or delays uterine contraction if given in moderate quantities, so as only to produce obstetrical, not surgical, anæsthesia. For prolonged operations he uses ether always.

Dr. H. J. Garriges, of New York, uses anæsthetics in every case in the second stage of labour, unless the patient

objects, generally chloroform. He considers that it is apt to invite want of contraction and hæmorrhage. He considers ether safer if the kidneys, lungs and brain are healthy.

Dr. Wm. Polk does not use anæsthetics if he can evade it, and then only at the close of labour, never in pathological cases. He considers, outside of the relief of pain, the effect is a bad one, as it both induces hæmorrhage and delays uterine contraction in the third stage.

Dr. E. H. Grandin as a rule uses an anæsthetic when the presenting part reaches the pelvic floor, always in primiparæ. He uses chloroform, except in cardiac cases, and then ether. He finds that it produces relaxation of uterine spasms and of spasm of the muscles and fascia of the pelvic diaphragm. "If the anæsthesia be prolonged," he says, "I am on the lookout for excessive hæmorrhage and delayed uterine contraction." He uses chloroform in prolonged operations when a careful anæsthetist gives it, otherwise he uses ether.

Dr. Reynolds uses anæsthetics in the second stage of labour when the contractions are good. He finds the action to be relaxation of the os and the muscles of the perineum, with diminution of the force of labour, in slow cases this latter being one of the disadvantages of the use of the drug. He says he generally carries ether to the point of unconsciousness so soon as he can control the chin per rectum in the belief that he can more often by this method save the perineum. He believes that the use of an anæsthetic in the second stage causes an increase in the relaxation of the uterus and consequent hæmorrhage. He has never had a fatal case of post-partum hæmorrhage. He uses ether entirely because the opinion of the community in which he lives is against the use of chloroform.

Dr. Clifton Edgar does not use anæsthetics as routine in the second stage of labour. When he does use an anæsthetic he uses the A. C. E. mixture, sometimes sulphuric ether. He finds that it relaxes a rigid cervix, often

rendering the subsequent pains more efficient. Chloroform, he finds, is likely to produce both hæmorrhage and delay in uterine contraction when used in excess. In prolonged operations he uses ether, and his chief objection to chloroform is that one not thoroughly familiar with its administration will abuse its use by giving too much.

Dr. Charles M. Green almost always uses anæsthetics in the second stage of labour and uses Squib's sulphuric ether. He find the effect produced to be a relaxation of the soft parts, better success in saving the perineum from laceration, both on account of relaxation and because he has complete control of the patient. Personally he has had no bad effects, but believes that long continued anæsthesia does predispose to uterine inertia and hæmorrhage. In prolonged operations he states that all the Boston men use ether to the exclusion of chloroform, his chief objection to chloroform being that it is more dangerous to administer.

Dr. E. P. Davis uses anæsthesia in nine cases out of ten, usually chloroform for normal cases and version, for all the other operations ether. He finds that it produces better uterine contraction by removing the cerebral inhibition from conscious suffering, partial relaxation of the uterus when pushed, facilitating manipulation. He believes that chloroform when properly used produces neither hæmorrhage nor delayed uterine contractions in the third stage.

It is generally agreed that the operator must always begin the anæsthesia if no skilled assistant is present. After anæsthesia has been begun the nurse may hold the inhaler, although the physician must himself pour on the fresh chloroform if needed. For the want of following this rule I have known of a fatal case happening. In chloroform narcosis the contra indications, are cases of anæmia in the dying, well-marked goitre, in myocarditis, in cases of dyspnœa or extreme collapse, heart disease, or placenta prævia.

To sum up, with regard to anæsthetics, in this country and the United States the majority of practitioners seem rather to favour its use, although in England and abroad they do not recommend its use to nearly the same extent, and almost every one of the authorities consulted agree that it undoubtedly predisposes to uterine inertia and consequent hæmorrhage in the third stage. This more particularly applies to chloroform, which is most commonly used. Anæsthetics are hardly ever used in the third stage, unless in cases of severe operative procedure.

Dr. J. C. Reeve, of Dayton, Ohio, one of the best authorities on chloroform in the United States and author of the chapter on the subject in the *American System of Obstetrics*, Vol. I, uses chloroform frequently whenever the pain is severe or the soft parts give slowly. He says he believes that it has an injurious effect likely to be marked in proportion to the length of time used and the depth of narcotism. He expects to watch a patient more closely after anæsthetics.

Dr. George L. Engelmann, of St. Louis, uses anæsthetics moderately in the second stage of labour, always chloroform, depending upon the sensitiveness and nervousness of the patient and relation of the pelvis to the head. He finds the effects vary with the case, pains more regular, powerful and efficient in many cases, especially in nervous women. He believes no ill effects arise in the third stage, unless overdone, and care is necessary.

Caseaux finds that chloroform is of service both in relieving pain and causing relaxation of the parts, but predisposes in the third stage to uterine inertia and p.p. hæmorrhage.

Such, I may say, is my personal experience both in private and hospital work. I consider towards the end of the second stage, where the pain is very severe, it is apt to cause inversion of polarity, thus delaying labour and consequently unnecessary suffering, therefore an anæsthetic should be given, and its use when the head is stretching the

perineum will very often save it from rupture. But to give it beyond the obstetrical degree and for long periods is not only unnecessary, but absolutely bad practice.

ERGOT.

We will next consider ergot, one of the most common drugs used in the third stage.

Playfair believes that it is thoroughly good practice to administer a full dose of the liquid extract of ergot in all cases after the placenta has been expelled to insure persistent contraction and to lessen the chance of blood clots being retained in utero. He prefers as a rule personally to give a subcutaneous injection of ergotine in cases where there is a history in previous labours of hæmorrhage after the birth of the child, when the presentation is so far advanced that we estimate that the labour will be concluded in from ten to twenty minutes, as we can hardly expect the drug to produce any effect in less time. In cases of postpartum hæmorrhage the dose may be repeated, but here the hypodermic use of ergotine offers the double advantage of acting with greater power and much more rapidly than the usual method of administration. It should therefore be always used in preference.

Chahbazain, of Paris, recommends an aqueous solution of ergotine the one two-hundredth of a grain in ten minums of water as acting more energetically.

Dr. Engelmann, of St. Louis, says in obstetric practice it does good service if given after the contents of the uterus have been expelled to stimulate contraction when labour is completed and as a safeguard, especially after the physician has left his patient.

Dr. J. C. Reeves, of Dayton, Ohio, does not use ergot as routine practice, but when he does give it it is only after the expulsion of the child, in doses of one fluid drachm. He finds that irregular contraction of the uterus is caused, imprisoning the placenta very frequently after its administration.

Dr. Norris, of Pennsylvania, recommends in every case the administering of one drachm of fluid extract of ergot in the treatment of the third stage.

Dr. H. Grandin, of New York, uses ergot as routine practice in obstetrics, after the uterus has been thoroughly emptied, and finds that its routine use prevents undue relaxation and appears to promote proper involution. He uses a half to one drachm of fluid extract of ergot for three days, and then twenty drops three times a day for a week.

Dr. Wm. M. Polk, of New York, does not use it as routine, but when he does give it is always after the second stage of labor, and he finds that it produces uterine contraction. He uses one drachm of the fluid extract.

Dr. Edward Reynolds, of Boston, uses ergot as routine practice, never before the delivery of the placenta, and finds that it hastens the occurrence of tonic contractions, and thus lessens the likelihood of postpartum hæmorrhage. He uses the fluid extract, Squibs, one drachm.

Porro recommends ergot in cases of hæmorrhage, or where hæmorrhage is likely to occur.

Dr. Marx, of New York, in large hospital experience, has in nearly every case given ergot by mouth, at or toward the end of the second stage of labor, and has never seen a bad result from its use, certainly never a case of accidental hæmorrhage. He finds that there is no better remedy to regulate the pains of labour than ergot. Possibly large doses of quinine, but this remedy does not increase the frequency of pains as much as it increases their vigour. It is impossible to wait for the administration of ergot until the uterus is absolutely empty, for then it would never be given, as there is always shreds of decidua and blood.

Dr. Nash, of Washington, does not approve of the administration of ergot after the placenta has been delivered, or that of promoting the process of involution by the daily display of ergot, digitalis and quinine, as is suggested in practice in some institutions.

Reynolds, in his work on midwifery, declares the efficiency of ergot in producing tonic retraction of the recently delivered uterus is undoubted, and since its use is productive of no possible harm it is the usual custom, and the author believes should be the habit of all obstetricians, to administer to the patient a teaspoonful of the extract immediately after the birth of the placenta. This is to be recommended as a routine procedure, because the action of ergot is too slow to render it of value if its administration is delayed until after the occurrence of hæmorrhage, unless it is given hypodermically, a procedure which it is wise to avoid, in view of the fact that the hypodermic use of ergot is not unfrequently followed by subcutaneous abscess. If it is so used it should be deeply injected into the substance of the thigh, as this method decidedly diminishes the risk of subsequent suppuration. The use of ergot by the mouth is occasionally followed by nausea, which is, however, rare, if no more than a drachm of the fluid extract is given in about two ounces of cold water.

Dr. Clifton Edgar does not use ergot as routine practice, but if given, always after the third stage. He finds it produces good uterine contractions, and possibly the prevention of after pains. He gives one drachm of fluid extract at a dose.

Dr. Charles M. Green, of Boston, uses ergot as routine practice, after the delivery of the placenta, never before, and finds that it promotes the contraction and retraction of the uterus and thus helps to prevent hæmorrhage. He generally uses a drachm of the fluid extract at a dose. He considers that grasping the fundus after the use of ergot causes a succession of rhythmical contractions and consequent retraction, which latter action permanently closes the uterine sinuses.

Dr. E. P. Davis, of Philadelphia, does not use ergot as routine practice, but only when the uterus fails to properly contract and remain contracted. He finds the effect produced to be that it promotes uterine contraction and fur-

thers involution, and when given in small doses after the third stage it increases blood pressure in the breast and furthers the secretion of milk. He uses the fluid extract in doses of from one drachm to ten minums.

Dr. Parvin, of Philadelphia, does not use ergot as routine practice in obstetrics. He occasionally gives it in the second stage of labour in small doses when the contractions are weak. After the delivery of the placenta, if the uterus fails to contract sufficiently, he gives from half to a teaspoonful of the fluid extract to provide against hæmorrhage. He finds that there is an increase of force in intermittent contractions from small doses, continuous action from large. In some cases he finds no beneficial results at all.

According to Wernich ergotine lessens the tension of the veins and increases their dilation. This produces arterial anæmiaof the uterus and its nerve centres, which increases the duration and intensity of its contraction; after strong doses the intervals cease altogether and a condition very like tetanus uteri sets in.

According to Kobert this action is due to sphaoelic acid contained in ergot, while the ergotinic acid has no effect on the uterus whether gravid or not. The third constituent part of ergot, cornutin, a pure alkaloid, was, according to Grafe's and Erhard's experiments, given repeatedly in the first stage of labour in doses of 5 mg. and in nearly two-thirds of the cases improved the pain and did the mother no harm.

Schatz declares that the action of ergot begins fifteen minutes after its administration by the mouth, is greatest in thirty minutes, and the effects of a single dose last for an hour.

Winkel says its use in placenta prævia, before and during labour is still sub judice. Auvard used it with unsatisfactory results, mortality being 42 per cent. of the mothers and 77 per cent. of the children. On the other hand Wilson had a mortality of 6.6 per cent. of the

mothers and 26.6 per cent. of the children, using it before labour.

Counter indications, I know of none, unless it be its administration during the progress of the first and second stages of labour, or in cases of known idiosyncrasy where it causes severe and exceedingly painful tonic contractions, amounting almost to tetanus uteri.

Caseaux recommends ergot for use in the third stage, as causing firm uterine contraction, promoting involution and tending to prevent hæmorrhage.

To sum up with regard to ergot, it is used by the great majority of practitioners, as well as recommended by the standard authors at home and abroad. They nearly all agree that it undoubtedly produces firm contraction of the uterus at the completion of the third stage, if given in doses of one fluid drachm, grasping the fundus, assisting in keeping up not only the contraction but the polarity of the uterus, and inasmuch as it takes 15 to 20 minutes to act it had better be given immediately on the completion of the second stage. None of them speak of any bad effects resulting from its use, and I fail to see why any sensible practitioner should refuse or object to its use. My own practice certainly is, both in private and in the hospital, to give one fluid drachm at the conclusion of the second stage, and in the hospital I give for the following week ten drops of the fluid extract three times a day, combined with both digitalis and quinine. This latter, I believe, both tends to close the sinuses and regions from which infection might occur, and to promote involution as well as slightly to increase the blood pressure. The latter I consider to be a distinct advantage.

STYPTICS.

Dr. Playfair states that in severe cases where the uterus obstinately refuses to contract in spite of all our efforts—and do what we may cases of this kind will occur—the only other agent at our command is the application of a powerful styptic to the bleeding surface to produce throm-

bosis of the vessels. The latter, says Dr. Ferguson in his preface to Gooch on diseases of women, appears to be the sole means of safety in those case of intense flooding in which the uterus flaps about in the hand like a wet towel. Incapable of contraction for hours, yet ceasing to ooze out a drop of blood, there is nothing apparently between life and death but a few soft coagula plugging up the sinuses. These form but a frail barrier indeed, but the experience of all who have used the injection of a solution of perchloride of iron in such cases proves that it is thoroughly effectual, and its introduction into practice is one of the greatest improvements in modern midwifery. The dangers of the practice have been strongly insisted on, but there are only one or two cases on record followed by any evil effects. Its extraordinary power of instantly checking the most formidable hæmorrhages is well known to all who have tried it. Indeed, Playfair goes so far as to say that no practitioner should attend a case of midwifery without having his styptic with him, and the best and most easily obtainable form is the liquor ferri perchloridi fortior of the B.P. and should be used diluted with six times the bulk of water. It is important that the air should be got rid of out of the syringe with which it is introduced into the uterus, and to get the best effect the uterus should be emptied of all clots, etc., before its use. After its use for some days intra-uterine injections should be used to remove the coagula which are certain to form, and thus avoid sapræmia.

Winkel says, in severe cases of hæmorrhage where other means have been tried and failed, equal parts of the liquor ferri perchloridi and water may be slowly injected into the uterus with good effect, or it may be applied by means of a sponge or piece of absorbent cotton to the site of the hæmorrhage.

Reynolds, of Boston, recommends that in severe cases of hæmorrhage, Monsell's solution or liquor ferri persulphatis diluted with four times its quantity of water should be

passed into the uterine cavity on a ball of absorbent cotton, the uterus being first cleared of all clots.

Dr. Norris, of Pennsyvania, considers that styptic salts of iron are dangerous, as the coagula produced by them may extend into the vessels and must be broken up by putrefaction, exposing the patient to septic poison.

To sum up with regard to the use of iron in postpartum hæmorrhage, several of the standard authorities, such as Playfair, Winkel, etc., recommend its use as being the only remedy that is invariably successful. My own experience has been most favourable to the use of iron, and in the Women's Hospital, as well as in private practice, the invariable rule is in all cases of alarming hæmorrhage, to use liquor ferri perchloridi diluted with from six to ten times its bulk of water. I have never had an accident during or after its use; the results have been invariably gratifying. A common objection has been raised, and that is air being injected into the vessels. I fail to see that it is any more likely to be injected with the iron solution than with any other injection, although one could perhaps understand air being imprisoned in clots, but this perhaps is far fetched and harmless. I think the chief danger, if not the only one, that is the clots which form in the uterus are firm and do not easily come away and are apt to set up sapræmia, unless they are washed away by intra-uterine douches given at least twice daily. Another danger might perhaps be if the end of the nozzle were applied directly to a sinus the solution might be pumped directly into the circulation. I can find a record of but three fatal cases from its use, two mentioned by Playfair and one witnessed by Dr. J. C. Cameron at the Rotunda, Dublin.

Noeggerath recommends tincture of iodine, 1 to 5 of water.

Dupierries 30 water, 15 tincture of iodine, potassium iodide 5. These do not seem to be greatly used, though they doubtless act as styptics.

Reynolds refers to tincture of iodine being used prefer-

ably to Churchill's, and states the advantage of iodine over the iron solution is its more stimulating character, and the lesser liability of causing an extensive thrombosis formation and a consequently increased danger of septic infection.

Penrose strongly recommends strong vinegar, which has the advantage of being always readily obtainable. He speaks highly of its hæmostatic effect. He soaks a clean handkerchief in it and introduces it by the hand into the uterine cavity, and squeezes it over the endometrium. He says the effect of the vinegar flowing over the sides of the cavity of the uterus and vagina is magical. The relaxed and flabby uterine muscle instantly responds, the organ assumes what is called its gizzard-like feel, shrinking down upon and compressing the operating hand and in the vast majority of cases the hæmorrhage ceases instantly.

Playfair remarks that it might be worth trying before using the iron solution.

Reynolds advises a 1 to 100 hot water solution of the officinal acetic acid as a prompt styptic.

Creolin if added, even in the quantity of a few drops, to the hot water injections used in post-partum hæmorrhage, acts as a powerful styptic as well as a good antiseptic, or carbolic acid may be added to the hot douche about the strength of 1 to 40 or 80 and would be found to act as a hæmostatic by its stimulating contraction of the uterus.

DISINFECTANTS.

The use of disinfectants in the third stage is at present a vexed question, and the use of douching either before labour or after labour, unless for cause such as a severe leucorrhœa or one that is suspected of being infected by gonococci, is at present rather condemned than advised. In one of last numbers of the *Archives for Gynæcology* are statistics very unfavourable to it. Probably the most commonly used disinfectant is corrosive sublimate.

Winkel says the use of corrosive sublimate for irrigating

the uterus is to be avoided, as poisoning is liable to supervene, but if used, a 1 to 5000th corrosive sublimate solution at a temperature of about 110 to 115° F., that is, at that which is distinctly but not uncomfortably hot for the hand.

Playfair says that a solution of 1 in 2000th solution of perchloride of mercury may be used, if needed, to diminish the danger of sapræmia.

Reynolds recommends a 1 to 5000th corrosive sublimate solution at a temperature of 110 to 115° F.

Dr. Howard Kelly writes, "The best disinfectant in puerperal cases is pure warm water. The trouble of all drugs applied intra-uterine is that they only reach the less superficial area, and if there are any foci of infection the germs which lie deep in the tissues are neither destroyed nor removed. For this reason I consider the mechanical means, with pure and free drainage, the best. The bichloride of mercury I consider dangerous and inefficient, and ought never to be used under any circumstances intra-uterine."

Dr. Norris, of Pennsylvania, says the bichloride of mercury is effective but dangerous. Creolin is as powerful and safer, and is therefore to be recommended.

My own experience of the use of corrosive sublimate post-partum, in similar and even weaker solutions, is most unfavourable, although followed by large douches of warm water, which but few authors recommend to be used. In a solution strong enough to be of service most authors agree it is dangerous to use intra-uterine, and it ranks no higher in the comparative table than does creolin and probably strong solution of permangenate of potash. Therefore it ought to be discarded, except for external use.

Ice and iced water are recommended by many authors to be used in cases of p.p. hæmorrhage, the ice introduced to be not larger than a walnut. There are several objections, I think, to its use; it increases the shock already existing, although it undoubtedly checks the hæmorrhage

for the time being, and as soon as it melts or is removed the hæmorrhage often returns as severely as before, the uterine vessels which it contracted now dilating. Great care would also have to be used that no sharp irregular pieces were introduced, as the contraction produced by the ice might possibly drive the sharp points through the uterus. In winter in this country some practitioners make a hard snowball and introduce it, thus avoiding the danger of perforation.

Hot water is probably the most commonly used and best means for checking p.p. hæmorrhage at a temperature of from 110° to 128.75° F., this latter temperature being, in my opinion, much too warm, being decidedly uncomfortable to the hand. The water should have been boiled and been allowed to cool. It has the advantange of being always obtainable, of as a rule stopping the hæmorrhage, and of allowing afterwards some other means to be used if desired. The quantity to be used should be at least from one quart to half a gallon, and if given by a douche bag held sufficiently high, at least six or seven feet, will not only check hæmorrhage, but also remove the debris from the uterus. One point about giving the hot douche is that a metallic nozzle should never be used, preferably a perfectly aseptic German glass tube.

The question may be asked, what would you consider a dangerous hæmorrhage? This is only a relative term, for what to one would be but a slight hæmorrhage might to another, or to the same under certain conditions, be a dangerous hæmorrhage. Generally speaking a slight hæmorrhage would be from 500 to 1,000 gms. of blood lost, a profuse hæmorrhage from 1,000 to 1,500 gms., and a dangerous from 1,500 to 2,000 gms.

STIMULANTS.

Amongst the stimulants used in p.p. hæmorrhage probably none will be found to act more promptly or satisfactorily than the nitrate of strychnia, in doses of from one-fortieth to one-twentieth of a grain hypodermically, within

a very short period the pulse rate becoming much slower and fuller.

Opium in cases of hæmorrhage is highly recommended by many of the authors and seems to have a direct action as a stimulant upon the heart. It is best given in the form of a hypodermic of Battley.

Brandy or ether are used hpodermically, either after severe hæmorrhage with heart failure, or heart failure from any cause in the third stage or immediately after it. It is given hypodermically in half drachm doses repeated as often as needed. Most authorities recommend its use.

A solution of chloride of sodium, although seldom used directly in the third stage, may be needed and is a most excellent remedy immediately after severe cases of hæmorrhage, whether post-partum or in cases of placenta prævia. Its use is found in supplying fluid to the arterial system depleted by the hæmorrhage, and perhaps preventing too great absorption of noxious fluids. It may be best administered in the strength of a desert-spoonful and a half to a quart of tepid water and allowed to trickle into the rectum from the douche bag placed at about the level of the anus, the attendant every half hour lifting the bag and allowing a small quantity to enter. As much as a gallon and a half may thus be given and absorbed in thirty-six hours, the effect on the pulse being most gratifying, being not so compressible and much more full. The advantage of the solution of sodium is that it is readily absorbed by the rectum.

In conclusion, I beg to thank you, gentlemen, for the patience with which you have listened to me. The brief which I have held for the use of drugs in the third stage I have endeavoured to defend, and I hope to convince any sceptics, if it be possible there are such, that drugs are not only useful, but on occasions absolutely required, and any one not using them places himself against the weight of authority in the medical world.

THE EARLY SYMPTOMS AND THE TREATMENT OF HIP-JOINT DISEASE.

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Before considering the early symptoms of hip-joint disease I would like to call attention briefly to a few facts which are observed clinically. Joints attacked by inflammation, either intra or extra capusular, have a condition of rigidity or spasm of the muscle about them. This is due to irritation of the terminal nerve plates in the area of disease transmitted through the reflexes. The muscles operating upon the joint, which are supplied by a nerve given off from a common nerve trunk (one branch distributed to the area of disease, the other to the muscle) are affected by spasm, while the other muscles may remain quiescent. That muscle affected by spasm will rapidly atrophy. These facts are observed particularly in inflammation of the knee-joint. The knee-joint is supplied posteriorly by branches from the great sciatic nerve. The patella is supplied by nerves given off from the anterior crural. When inflammation attacks the condyles, flexion and rapid atrophy always takes place, but in patella disease or diseases located anteriorly the limb remains in a straight position, owing to the fact that the reflexes are distributed through the anterior crural, and not through the great sciatic. Assuming that these propositions are correct, and clinical observations seem to demonstrate them, we must at once conclude that rigidity of the muscles from spasm, producing a limit of motion, would be the first symptom observed in any joint disease. Limit of motion in any joint produces deformity; we would designate as the second most common early symptom in joint disease, deformity.

This limit of motion and deformity produces a limp. So that I think we can safely say that limit of motion, deformity and limp are nearly always, if not always, present in hip-joint disease in the early stages, There are in general joint diseases eight cardinal symptoms, two or more of which are always present. These cardinal symptoms are pain, heat, swelling, pain on joint pressure, limited motion, spasm of the muscles, atrophy and deformity. Each joint has superadded to these eight cardinal symptoms other special symptoms. These special symptoms are due to the anatomical characteristics of the joint. In hip-joint disease pain is not always a common symptom, rise of temperature owing to the depth joint is hardly perceptible; swelling is not seen until effusion or dislocation takes place; pain on joint pressure is present only in intra-capusular disease, located between or near the articular surfaces. Limited motion, spasm of the muscle, limp and deformity, with apparent lengthening or real shortening, are nearly always seen associated together. Atrophy pretty constantly occurs, especially in bone diseases, and it may occur as early as the tenth day. The other symptoms observed in the early stages are night cries, pain in the knee, flattening of the buttock, partial or complete obliteration of the gluteal fold.

When the limb is in a straight position the muscles accurately balance it, but when the limb becomes flexed the action of these muscles is changed in proportion to the amount of flexion. If these muscles are in a condition of excitability or spasm from reflex irritation, one can easily see how various deformities can take place depending entirely upon the position of the limb when the muscles act. When this great mass of muscles is affected by spasm, which is always the case in inflammation, one can readily see how limit of motion and deformity to a greater or less extent, must be the earliest symptoms observed.

Before the last American Orthopædic Association, I presented a model, together with several dissections which I

had made of the joint, for the purpose of demonstrating why the limb assumes certain positions, with occasional exceptions, when the joint is inflamed. The capsule of the normal joint is twisted around the head and neck in such a manner that when the limb is in a straight position great tension is exerted upon the joint through the capsule and its other ligaments. Now, when the joint or capsule becomes inflamed, the patient invariably places his limb in a slightly flexed and adducted position to relieve tension and changes altogether the action of the muscles, they being in a condition of spasm, together with the voluntary act, produce the deformity of the first and second stage of the disease. When flexion takes place just a little further the action of the muscles is entirely changed; abductors become inward rotators; outward rotators become to a certain extent abductors, etc., etc. Resistance not being offered to the abductor muscles, the limb, by their contraction, passes over to the deformity of the third stage of hip-joint disease, that is, abductive flexion and inward rotation. There are exceptions to these deformities, which I have designated as erratic, but they will not be considered now.

These deformities take place whether disease is intra-capsular, whether there is affection into the joint or not, and let me say here that only a limited number of cases have effusion into the joint in the early stages.

To conclude, the importance of symptoms, I believe, speaking generally, occur about in the following order:

1, Limit of motion.

2. Deformity, with apparent lengthening or real shortening.

3. Limp.

4. Atrophy (bone disease).

5. Pain in knee (with absence of the knee-joint disease).

6. Pain on joint pressure.

7. Night cries in absence of other joint disease.

8. Flattening of buttock, with change in glueal fold.

9. Heat

10. Swelling.

The order of these symptoms might be transposed a little by some authors, but this order will answer for diagnostic purposes.

Treatment.—The treatment of hip-joint disease is divided into operative and mechanical. In all cases where abscesses are present they should be immediately evacuated. This enables the surgeon to intelligently explore the diseased joint with his finger and ascertain to what extent the disease has progressed. If the head of the bone is separated from the neck it should be removed, together with the great trochanter and the neck. The acetabulum if diseased should be thoroughly curetted, together with any other diseased tissue that may be found in the joint. If only small points of disease are found within the joint those should be curetted, together with whatever diseased tissue exists within the joint, and the cavity washed out with bichloride solution 1 to 2,000. The joints should now be filled with a solution of iodoform and glycerine, one-half ounce of iodoform to four of hot glycerine. After this has been done the patient should be put in bed with extension in the line of deformity and lateral traction above the knee, amounting to about three pounds. Day by day the limb should be lowered, until the deformity is overcome. When the deformity is overcome, the lateral traction fixation splint which I devised and use in the Post-Graduate and University Dispensaries should be adjusted and the patient put on crutches with a high shoe on the well leg. Pus and tubercular material destroys living tissue, and when joints are allowed to macerate for weeks and months in these materials, which now seems to be the favourite method of many of our orthopædic surgeons, extensive destruction of bone will almost surely follow. In many cases extensive cutting of muscles, tendons and fascia may be necessary to overcome the deformity. The reader will see, then, that we believe that deformities should be first overcome and all abscesses opened before the mechanical work begins.

No case of hip-joint disease need recover with angular deformity, and to secure and attain this end steps should be taken at the commencement of treatment to place the limbs parallel, after which the lateral traction fixation splint, already alluded to, will prevent the patient from becoming again deformed.

Mechanical Treatment.—For many years the profession have been taught that the long traction splint used by Sayra, Taylor, and others, was the proper machine to use. The patient is allowed to walk upon this splint, using it as a perineal crutch. The splint stops at the trochanter and exerts no power over the joint on that account to fix the joint. The patient stepping upon this splint with the strap around the perineum causes trauma of the joint while walking, and nearly every splint that I have seen adjusted allows the patient to put his toe upon the ground, which, of course, drives the head of the bone into the acetabulum each time the patient steps. This pumping of the head of the bone backwards and forwards into the joint at the rate of 2,000 times an hour each day, as the child runs, accounts for the disastrous results which we see published from institutions where this splint is used. The statistics published by Shaffer and Lovett in the *New York Medical Journal* from the 59th Street Orthopædic Dispensary in 39 cases reported on in a series of many hundred.

Ankylosis	19
Slight motion	6
	25
Motion from 10 degrees	7
Motion to right angle	3
Motion free	3

The three with free motion were treated during the first stage of the disease; two were under three years old. There were only two cases without shortening. The splint used was the long traction, which I have already described, —one which admits of free motion at the hip joint and the patient is allowed to walk upon. This splint was devised during a time when it was believed the fixation would

produce ankylosis of the joint, and that motion was necessary to keep up the nutrition of the joint. It is needless for me to say that we have outgrown both of these ideas. The statistics of Chambers' Street Hospital of 50 consecutive fractures of the elbow joint show only one case of ankylosis. These patients were fixed in plaster of Paris

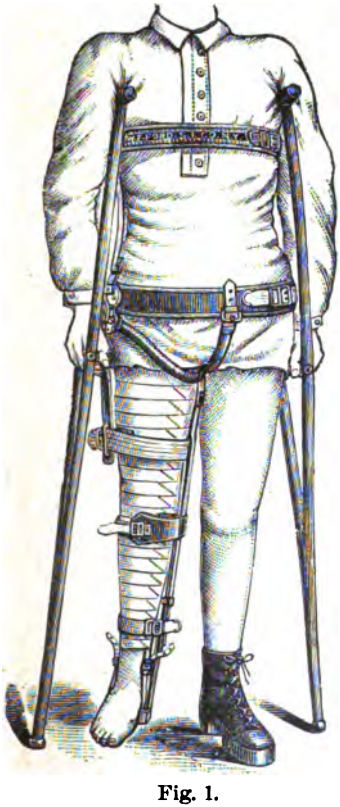

Fig. 1.

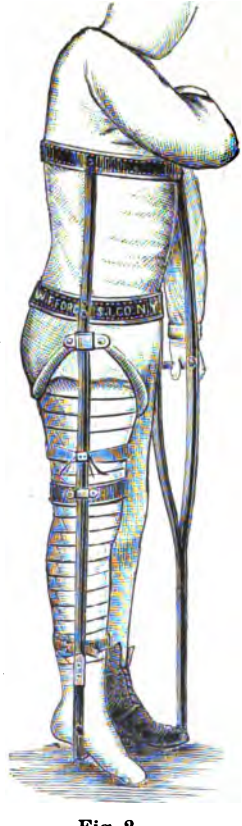

Fig. 2.

for many weeks, without passive motion. In the Post-Graduate Hospital and University Dispensary we fix our cases of hip-joints from one to five years without motion, with the lateral traction fixation splint, and in our long series of cases not one has resulted in bony

ankylosis, and where we have had control of the patients they have recovered, practically, without angular deformity. Shortening is seen in this long cases series of cases only from non-development of the limb, and extensive bone destruction. The accompanying cuts and description will convey a very accurate idea of the splint which we use in treatment after the deformity has been in bed overcome. Tissues inflamed or diseased should be put at rest, to allow the normal process of repair to take place without the

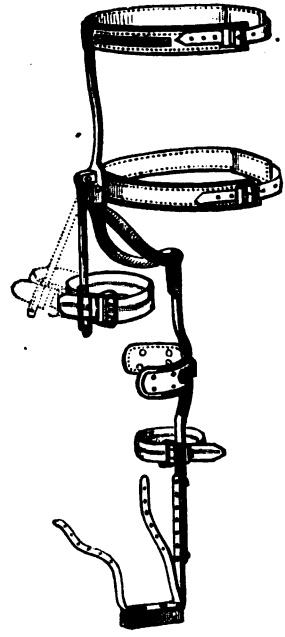

Fig. 3.

trauma of motion. This is the law. It is applied in the treatment of the iris, fractures, sprains, and any tissue that can be immobilized. To carry out the requirements of this law so far as is possible I was led to devise the splints illustrated in this article.

To fix the hip-joint, a splint must extend from the foot to the axilla. (See Figs. Nos. 1 and 2,)

Fig. 1 represents the perineal crutch, with the abduc-

tion bar, adjustable by means of a key, for the purpose of making lateral extension. The steel bar is adjusted to the steel ring, which makes a firm crutch, the pressure coming on the tuberosity of the ischium. Adhesive straps extending to near the body from the ankle furnish means of extension by tightly buckling them to the straps in the foot piece, the ring furnishing counter-extension. The rod ending in the upper ring, prevents flexion and extension of the legs. The splint is intended to prevent

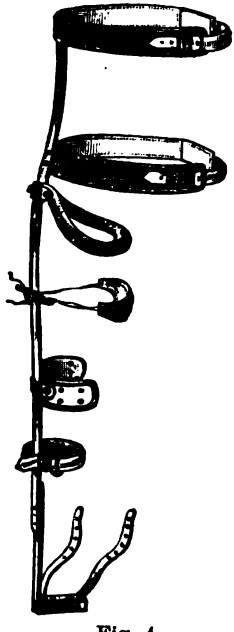

Fig. 4.

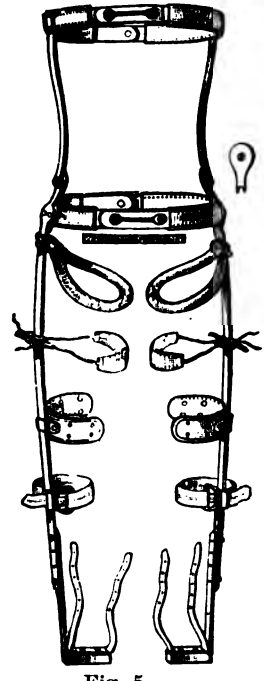

Fig. 5.

every motion at the hip-joint, and at the same time apply extension in a line with the neck of the femur. Fig. 1 shows the crutch and splint adjusted, the patient using crutches and standing upon a high shoe upon the well leg.

This splint I found a little too expensive for dispensary work. I then constructed the splint (Fig, 3), which simply does away with the extension joint and key. This was

also too expensive for hospital work, but both splints did the work perfectly.

After a time, for my poor patients in the hospitals and dispensaries, I sueceeded in perfecting a cheap splint, which applies the principle of fixation and traction in the line of the neck.

A glance at the cut will convey the idea. Fig. 2 and 4 are the single and Fig. 5 the double splint for hip disease. The splint is a bar of steel, extending from the foot to the axilla, accurately bent to fit the body. A tracing made on paper by laying the child on it will assist in shaping the bar. A pelvic belt, a thoracic belt, and a great perineal ring complete the fixation part of the splint. The straps in the foot-piece buckles to adhesive straps attached to the leg, which make longitudinal traction. The strap lashes the leg to the splint, making lateral traction precisely as the abduction bar acts in Figs. 1 and 3.

An ordinary blacksmith can construct this splint.

Before either these or any other splint is adjusted, however, the patient should be treated in bed until deformity is overcome and the active stage of the disease somewhat modified.

To conclude, my observations lead me to believe that the most serious element of destruction in hip-joint disease is the training and pressure produced by the spasm of the muscle ; and walking on the splint ; that fixation of the joint without extension is an impossibility ; that the successful treatment of the joint must depend upon its absolute immobilization, which can only be produced by proper extension and fixation ; that the constitutional treatment of hip-joint disease amounts to little, independent of mechanical treatment ; that mechanics is everything ; *that extension in a line with the axis of the shaft and deformity alone, in hip-joint disease, is entirely wrong ;* that extension should be *made in a line parallel to the axis of the neck,*—in other words, *two lines of extension,*—otherwise the idea of extension is not perfectly carried out ; that

ankylosis of the joint is not produced by immobilization, but by the severity and character of the inflammation; that the long traction hip-splints in general use neither properly extend nor immobilize the joint; that the intra-articular pressure results in the destruction of the joint or ankylosis in a large percentage of cases is proved by statistics; that the results in hip-joint disease should be as good as those of knee-joint disease, and will be, provided perfect immobilization can be carried out; that patients should never be allowed to step on any portative apparatus; that a high shoe on the well leg and crutches should be insisted upon until the patient is cured; finally, *that the angular deformity seen in cured cases should not occur, and such cases are a standing rebuke to the splint and methods employed. In other words, no patient with hip-joint disease need ever recover with angular deformity.* In exceptionally neglected cases of dislocation a slight amount of deformity had better be left than resort to osteotomy.

Reviews and Notices of Books.

On Chorea and Choreaiform Affections. By Dr. WILLIAM OSLER, M.D., Fellow of Royal College of Physicians, London; President of the Association of American Physicians; Professor of Medicine Johns Hopkins University, and Physician-in-Chief Johns Hopkins Hospital, Baltimore. London: H. K. Lewis, 136 Gower street. Philadelphia: P. Blakiston, Son & Co. 1894.

Dr. Osler has done so much good work in chorea and allied affections that we welcome with pleasure a systematic treatise on this subject from his pen. This volume represents the results of much accurate study and great experience. Following an introduction we have chapters devoted to the etiology and symptoms of the disease. One of the best chapters in the book is that on the heart in chorea minor. The morbid anatomy, pathology and treatment are fully considered. The remaining chapters deal with the allied affections, as simple and general tic, habit chorea, tic with imperative ideas, complex co-ordinated forms of tic, and chronic progressive or Huntington's chorea.

Text-Book of Hygiene. Comprehensive Treatise on the Principles and Practice of Preventive Medicine from an American Standpoint. By GEORGE H. ROHÉ, M.D., Professor of Therapeutics, Hygiene and Mental Diseases in the College of Physicians and Surgeons, Baltimore; Superintendent of the Maryland Hospital for the Insane; Member of the American Public Health Association; Foreign Associate of the Société Française d'Hygiène, etc. Third edition, thoroughly revised and largely rewritten, with many illustrations and valuable tables. Philadelphia: The F. A. Davis Company.

The third edition of Dr. Rohé's treatise on hygiene is in many respects an improvement on previous editions. For the general practitioner and those who devote their sole attention to this subject the book is a valuable one. The chapters

on the measures which should be followed in combating different epidemics are full and up to our most recent knowledge on these subjects. The subject of quarantine is very ably handled by Surgeon-General Walter Wyman and Dr. H. D. Geddings, of the United States Marine Hospital service. Dr. A. L. Gihon, of the United States Navy, revises the chapter on marine hygiene.

Practical Urinalysis and Urinary Diagnosis: A Manual for the Use of Physicians, Surgeons and Students. By CHARLES W. PURDY, M.D., Queen's University; Fellow of the Royal College of Physicians and Surgeons, Kingston; Professor of Urology and Urinary Diagnosis at the Chicago Post-Graduate Medical School; author of "Bright's Disease and Allied Affections of the Kidneys"; also of "Diabetes: Its Causes, Symptoms and Treatment." With numerous illustrations, including photo-engravings and coloured plates. In one crown octavo volume, 360 pages, in extra cloth, $2.50 net. Philadelphia: The F. A. Davis Co., Publishers, 1914 and 1916 Cherry street.

This work, as its title indicates, is devoted to practical urinalysis and the diagnosis of urinary diseases. It is in many ways the most complete handbook on the subject in the English language. It deals not only with the medical, but also with the surgical aspects of the entire subject. It is therefore specially adapted for the needs of those who are in general practice.

In dealing with normal urine the author considers each of its constituents as follows: Its chemical nature and composition; its source; the meaning of its increase or decrease; together with the relations each constituent bears to metabolism, food supply, etc, etc. The most approved and recent methods for the quantitative and qualitative determination are fully given. The abnormal substances met with are also treated in a full and satisfactory manner. The second part of the work treating of urinary diagnosis is a concise description of the various urinary diseases, their diagnosis, causes and treatment. A valuable chapter is also devoted to urinary examinations for life insurance.

The Theory and Practice of Medicine. By FREDERICK T. ROBERTS, M.D., F.R.C.P., Professor of Materia Medica and Therapeutics, and of Clinical Medicine, at University College; Physician to University College Hospital, etc. Ninth edition. London: H. K. Lewis, 136 Gower street. 1894.

The well-known text-book of Dr. Roberts has been a favourite work for upwards of twenty years. Extremely few works of this character have for so long a period enjoyed the confidence of students and practitioners. The arrangement of the work has been altered in some respects in the present edition. The changes made will conduce to its usefulness. Recognizing the great importance of bacteriology to the thorough comprehension of so many diseases, the author has devoted special consideration to this subject, both in its general aspect and in its connection with special diseases. Connected with each system there are chapters devoted to its general therapeutics which will prove, we have no doubt, of value in enabling the reader to gain a more thorough grasp of his subject.

It is hardly necessary to mention that the work on the whole has been thoroughly revised. The well-known publishers have performed their part well.

An American Text-Book of the Diseases of Children. By American Teachers; Edited by LOUIS STARR, M.D., Assisted by THOMPSON S. WESTCOTT, M.D. Philadelphia: W. B. Saunders. 1894.

This is a large and beautifully printed and illustrated volume of more than 1,100 pages, in which the articles have been contributed by the more eminent teachers of pædiatrics in America. Not only does it embrace all those subjects which are generally included in a work on medicine proper, but it includes also special chapters on essential surgical subjects; also on diseases of the eye, ear, nose and throat, and a series of chapters on diseases of the skin.

The author says in his introduction that it has been his object to have careful condensation without omission. He has, therefore, limited the subject matter to such practical points as etiology, symptomatology, diagnosis, treatment and prophylaxis.

The volume opens with a chapter on the clinical investigation of disease in children, by the editor. Prof. Leeds, of New York, contributes an exhaustive paper on the chemistry of milk and of artificial food for children. Exercise and massage, and sea air and sea bathing in convalescence are chapters which will afford the practitioner useful knowledge, not easily obtained elsewhere.

Dr. Osler furnishes an excellent chapter on tuberculosis and discusses the various general and localized forms in which it is met with in childhood. Speaking of its prophylaxis he says: "While the possibility of inherited transmission from an infected mother cannot be denied, we have to face the fact that in a large proportion of all cases of tuberculosis the infection is at the gateway of the body—namely, in the bronchial and mesentric lymph-glands—and we have here a clue to the two chief sources of danger. The liability of children to contamination through the air when other members of the family are diseased is greater than in the case of adults, and the habit of young infants as they creep about of putting everything in their mouths enhances the liability to infection. The second danger lies in the use of milk from tuberculous animals. Experiments have shown the readiness with which young pigs and calves become infected when fed with milk of tuberculous cows. We have, unfortunately, no reason to believe that children are less susceptible than calves. The infection through meat is probably a very slight danger. Individual prophylaxis in the infant is of almost equal importance. A child born of delicate parents, or in a family in which tuberculosis has prevailed, should be reared with the greatest care."

The infectious diseases receive full consideration in a series of carefully written articles. Dr. Northup writes the article on scorbutus, and remarks that this is the first time in which scurvy has appeared in a text-book as a disease occurring in the United States.

Among the notable chapters in the part devoted to diseases of the digestive organs is an article on diarrhœal diseases, by Dr. Vaughan, of Ann Arbor. These are treated under the following sub-divisions: Acute Intestinal Indigestion, Chronic Intestinal Indigestion, Milk Infection, Acute and

Subacute. In speaking of the summer diarrhœas of infants, he says, "These diarrhœas are due to poison-producing bacteria. There is not a specific micro-organism, as there is in tuberculosis, but any one or more of a large class of germs may be present and may produce the symptoms. . . . . The contents of the intestines in the so-called summer diarrhœa of infancy, swarm with bacteria of many species, and some of them produce most powerful poisons. These bacteria multiply outside of the body, and are disseminated widely and abundantly only when the atmospheric temperature reaches 60°F. or higher. This is the reason for the restriction of these diarrhœas to the hot months of summer. . . . . There is no doubt in my mind that wholesome, uninfected milk in the raw state is a better food for the infant than cooked milk. The heat of sterilization robs the casein of the milk of its vital properties, as can be demonstrated by experiments. But I am equally positive that it is better to feed the city child upon sterilized milk, than it is to use that which, with the prevailing ignorance and carelessness of dairymen and dealers, is liable to be infected. The risk of using unsterilized milk is too great, and the question with the parent, or physician, is not am I giving the child the best food? but am I giving it a poison? The choice is easily made when the matter is looked at in this light." Diseases of the Nervous System form the next division, and the several subjects receive careful consideration. The principal articles in this department are written by Dr. Chas. K. Mills, Dr. Frederick Petersen, and Dr. Landor Carter Gray. Diseases of the Respiratory System, Diseases of the Heart and Diseases of the Gonito-Urinary System follow, containing contributions from Dr. Pepper, Dr. Shattuck, Dr. Barton Hirst, and others. The volume ends with very complete articles on Diseases of the Skin, of the Ear and of the Eye, as met with in children.

The work is one of the most important which has been published on the subject of Diseases of Children for some years past. The publishers have spared no expense on their part of the work. Many of the plates are coloured and the woodcuts and photographs are numerous and well executed.

The Principles of Surgery and Surgical Pathology.

General rules governing operations and the application of dressings. By Dr. HERMANN TILLMANNS, Professor in the University of Leipzig. Translated from the third German Edition by John Rogers, M.D., New York, and Benjamin Tilton, M.D., New York. Edited by Lewis Stimson, M.D., Professor of Surgery in the University of the City of New York, Medical Department. With 441 illustrations. New York: D. Appleton & Co. 1894.

In this work only the principles of surgery and surgical pathology are taken up, following the German method of dividing surgical text-books into two distinct parts, the "general" and "special."

It is subdivided into three sections, the first dealing with the general principles governing surgical operation; the second, the method of applying surgical dressings; and the third, surgical pathology and therapy.

Under the first heading are discussed all questions likely to arise before, during and after an operation. Rules are laid down for the preparation of the patient, the instruments and dressings; the various methods of producing anæsthesia are briefly reviewed, chloroform being given first place, although ether is allowed to be the safer anæsthetic; a chapter is devoted to the prevention of loss of blood during an operation. The method of dividing and of suturing the tissues are described, and also the drainage of wounds and the principles governing this procedure. This section closes with general considerations on amputations, disarticulations and resections, and also on plastic operations.

The second part of the work, dealing with the methods of applying surgical dressings, is the most important part of the work in some respects, for here we have the preparation of antiseptic and aseptic dressing, the uses of antiseptics, when and how to change an antiseptic dressing, as well as much other information of a similar character which is not usually dealt with at length in text-books. The third and last part of the book is devoted to the pathology and treatment of surgical diseases, inflammation, injuries, diseases and injuries of bones and joints, ending with a short section on tumours.

The work is a departure from the usual line of surgical text-

books, as will be seen from the *resumé* of the contents which we have given. This sketch gives an inadequate idea of the value of the book, being merely an outline of its scope, but it can be readily seen that it will prove more useful, both for study and reference.

Of the press work and illustrations, we need only say that they are fully up to the publisher's usual standard.

Surgical Pathology and Therapeutics. By JOHN COLLINS WARREN, M.D., Professor of Surgery in Harvard University; Surgeon to the Massachusetts General Hospital; pp. 832, illustrated. Philadelphia: W. B. Saunders. 1895.

This valuable work deals with the scientific side of surgery exclusively, a side which of late years has come into such prominence. Very properly the first chapter is devoted to bacteriology and the next to the surgical aspect of the same subject. Coloured plates are introduced representing the different bacteria as they appear under the microscope, and also representing culture tubes, showing their growth. These will serve as a great help to the reader, the plates being very carefully drawn and coloured.

The infective inflammations form an important part of the work, including a very useful chapter on acute osteomyclitis. Tumours are divided according to their clinical characters, namely, into malignant and benign, and their characteristics are described as they appear in the various parts which they attack. The infective diseases also receive due attention. Altogether it is a work which is most readable, and we can strongly recommend it to all who wish to study surgical pathology and the therapeutics based thereon.

Selections.

Colds: Their Causes, Prevention and Treatment.—While we are all familiar from personal experience with the phenomena of an ordinary cold, yet to explain the relation between the cause and the effect becomes extremely difficult. For example, we know that if the feet are exposed to cold and dampness we are almost sure to suffer from an attack of coryza or cold in the head. Why should the exposure of the feet give rise to an inflammation is so distant a portion of the body ?

Many theories have been advanced in explanation. One theory is to the effect that an impression upon one surface of the body is conveyed to the brain centres and reflected by the sympathetic nervous system to another and distant portion of the body. The impression being reflected and symptoms manifested in that portion where there is the least resistance. If the mucous membrane of the nasal cavities has been weakened by previous attacks, or is in constant state of mild inflammation, the symptoms will be manifested here. If the throat or bronchial tubes constitutes the area of least resistance it is here that the inflammation will be manifested. While this theory is somewhat plausible, yet it is not entirely satisfactory.

Another theory is to the effect that if the blood is driven from one portion of the body as a result of exposure, it causes congestion and increased blood pressure in other portions, especially the internal organs. This theory is not satisfactory. If true, it would be the internal organs that would suffer, and not the superficial ones.

Another theory, advanced by Bosworth, is to the effect that taking cold is due to the removal of heat to an unusual extent from the external or internal surface of the body. This gives rise to a functional disturbance, which

in turn excites some morbid process in some distant portion of the body. It is undoubtedly true that taking cold, or the phenomena that result from exposure, is due to some disturbance in the relation existing between heat production and heat radiation. We know there are certain nutritive changes going on constantly in the body. We know that these nutritive changes produce the body heat. We know that the normal temperature of the body produced by these nutritive changes is 98.6 degrees. We also know that there is a constant radiation of heat from the body. If there is a disturbance between the normal relation of heat production and heat radiation, certain morbid processes are sure to result. If more heat is extracted from the body than can be produced by those nutritive changes, alarming and fatal symptoms at once occur.

Bosworth has well illustrated this result in the case of a swimmer. As long as one, by active exercise in the water, can maintain the normal body temperature all goes well, but when sufficient activity can not be maintained to keep up the normal body heat, then there is the great exhaustion, intense venous congestion, feeble circulation and the fatal cramps.

In case only a portion of the body is exposed to cold or dampness there is simply a disturbance of the nutritive changes occurring in that part and the effect of this disturbance is manifested in some distant part, in that portion where there is the least resistance. This heat production and distribution has been compared (Bosworth) to that occurring in an ordinary *chandelier*. If all the jets are lighted, they will burn with a steady, uniform brightness. If one or two jets are turned off, the others will burn with increased pressure and brightness. If one of these jets is somewhat defective as a result of previous injury, and unable to stand the increased pressure, then this will flare up with greater brightness than the others. So in the human system, the nutritive changes that are constantly

going on, by which animal heat is produced, is the result of a certain nervous force sent out from the brain, the great reservoir of all nerve force. If heat production is arrested or disturbed in a certain part of the body, the same amount of pressure or nerve force being sent out from the reservoir, it necessarily follows that there will be increased pressure, increased nutritive activity in other portions, and if there is a weakened, defective surface, the increased nutritive activity will be manifested here. Increased nutritive activity constitutes inflammation, and thus we explain why it is that exposure of the feet to cold and dampness will produce an inflammation in the nasal cavities.

Why is it that people who go into crowded stores enveloped in furs and seal skins so frequently take cold ? They can not understand it, for they are certainly clothed warmly. The trouble is this : As a result of the warm and oftentimes overheated atmosphere, together with the heavy wraps, more body heat is produced than is radiated. Nature endeavours to overcome this difficulty and perspiration occurs in order to diminish heat production. When they go out into the cold atmosphere, this perspiration is checked and there is now suddenly more heat radiated than before. There is again this loss of balance between the heat production and heat radiation, and a cold results. From these observations, it will be seen how easy it is to " catch a cold." The most common causes are exposure of the feet to cold and dampness, sitting in drafts and suddenly cooling off when the body is over-heated, passing from a close, over-heated atmosphere to one of cooler temperature, without proper protection, and last but not least, improper and insufficient clothing. Why is it that so many children, especially among the poorer classes in our great cities, are so frequently the subjects of chronic catarrh, bronchitis and laryngitis ? Simply because they are not properly clothed. If we examine the clothing of any poor child, we will be surprised to find it so poorly protected, and we will not wonder that their little bodies can not

produce sufficient heat to keep them comfortable. The wonder is not that so many die, but that so many live. In the majority of cases we will find their limbs clothed in thin stockings, with no underclothing. Their arms are usually protected by the single thickness of the sleeve of the dress. Their bodies are fairly well and warmly clothed, but the extremities very poorly. While the adult will hardly be comfortable without at least three or four thicknesses of clothing covering the arms and limbs, yet the little child is frequently expected to be comfortable and well protected by a single thickness.

When cold has once been contracted and allowed to run its course, certain tissue changes result in the parts affected, that render them far more susceptible to the subsequent attacks. After a few seizures these tissues become thickened or infiltrated as a result of the inflammatory process, so that only the slightest exposure is necessary to produce an acute attack.

As a result of the thickening of the parts, it often becomes difficult or impossible to breathe properly and easily through the nasal cavities, and the patient resorts, especially at night, when unconscious, to oral respiration. As a result of breathing continuously for hours at a time through the mouth we have, in the course of time, a chronic pharyngitis, and following this a chronic laryngitis.

Acute colds are not always confined to the nasal cavities. The usual symptoms of acute coryza are frequently followed by a cough indicating an acute bronchitis more or less severe and frequently lasting a number of days. These attacks frequently repeated undoubtedly pave the way and render the lungs susceptible to more serious diseases.

How shall we prevent a cold? By so protecting and clothing every part of the body as to maintain the normal relation between heat production and heat radiation. Obviously, we will not wear chest protectors and heavy clothing and go out in damp, cold weather with thin shoes. We will not muffle the neck and wear a fur or sealskin cloak, and go out with kid gloves upon the hands. One who is

subject to sore throat or bronchitis will make a great mistake by wrapping up the neck and chest in flannels and at the same time neglecting the feet.

It has been very properly said that the throat and chest will be far better protected by an overshoe on the foot than by a flannel about the neck. Sufficient clothing should be worn to keep the person comfortable and to keep the normal nutritive activity in every part of the body. We should avoid over-clothing one part of the body and leaving another part insufficiently protected.

Treatment.—If asked if a cold can be cured, we would answer yes, almost certainly. If asked if a cold is cured, we would answer just as promptly, no, or very rarely. Unfortunately colds are allowed to run their course or are treated so inefficiently that no effect is produced. Indeed, the rule is that that one will not give up " for it is only a cold" until the symptoms have become really alarming, and then it is too late to cure it—we can then only palliate the symptoms. As has already been stated, a cold that has been allowed to run its course does permanent injury to the parts affected ; resolution or return of the tissues to their normal condition is slow, even after the acute symptoms have subsided. Generally, before resolution has occurred, the person suffers another exposure and there is a renewal of the inflammatory process.

I again mention this tendency to recurrence on the slightest exposure to emphasize the importance of early and careful treatment. Bearing in mind the causes of these attacks, the indications for treatment become plain. We should endeavor to restore by appropriate measures the loss of balance between the heat production and heat radiation. Let us remember that as a result of exposure there has been deficient nutritive activity in that portion exposed. The measures to be instituted are those that will restore this nutritive activity to the normal degree. When, as a result of some exposure, it is evident that a cold has been taken, no time should be lost. The patient should at

once be given a hot foot bath, hot drinks as hot tea or hot lemonade, a good dose of Dover's powder, or ten grains of quinine, and placed in bed, well covered.

The copious perspiration that occurs indicates that our endeavours are successful, The normal heat production has been restored and nature is attempting to prevent an accumulation of heat by this sweating process. The patient should be uncovered gradually and thoroughly rubbed. Confinement to a warm room for a day or two, especially in cold, damp weather, is all that is needed to complete the cure. If cases are taken early, they can be almost invariably aborted by this line of treatment.

In many cases we can promptly abort a cold by the local application of atropia and cocaine, without the confinement of the patient to the house or bed, especially when the case is seen early. A 1 per cent. solution of atropia should be carefully, and not too freely, applied by means of a camel's hair brush or cotton applicator to the swollen and inflamed mucous membrane of the nasal cavities and especially to the distended turbinated bodies, followed by the application in the same manner of a 4 to 6 per cent. solution of cocaine, used rather more freely, and followed in a few minutes by the insufflation of a powder of cocaine, morphia and bismuth, or of cocaine, camphor and bismuth. Convenient formulæ are as follows :

Cocaine, mur..... ....gr. xxx.
Morphine, sulph ....gr. v.
Bismuth, subnit..... .....oz. 1.
M. Sig., use by insufflation.

Cocaine, mur..... .....gr. xxx.
Camphor.....drchm. 1.
Bismuth, subnit. ....oz. 1.
M. Sig. :
Boric acid.....,.....drchm. v.
Salol .....scruple, v.
Menthol..... .....gr. iv.
Cocaine .....gr. x.

The atropia and cocaine causes a speedy contraction of the swollen tissues and checks the profuse discharge, and the patient is at once rendered comfortable. In the course of an hour the difficult nasal respiration and attending symptoms return, and consequently the patient should be

provided with the powder and directed to use it when these symptoms are manifested. A few applications will, in the great majority of cases, entirely overcome the attack, A patient should never be given a prescription for cocaine without indicating to the druggist that it is not to be renewed. It is even a better plan to furnish the cocaine to the patients, not allowing them to know what they are taking, when there will be no danger of contracting the cocaine habit.

In some cases the cold is manifested, not only in the head, but in the chest as well, as will be indicated by a trying, frequent cough and a sense of constriction in the lungs. In these cases, in addition to the measure suggested, a hot water compress should be applied to the chest and well covered. Too frequently a cold is allowed to continue for two or three days before a physician is called in, and then the "golden opportunity" of "breaking the cold" is past.

While a simple cold is not in itself a serious or dangerous matter, yet it should never be neglected, on account of the consequences that may follow. It should be remembered that the proper time for successfully treating it is in the early stages.—*Colorado Climatologist.*

THE OPENING OF THE NEW BUILDINGS OF THE MEDICAL FACULTY OF McGILL UNIVERSITY.

The formal opening of the new buildings of the Medical Faculty of McGill University took place on the 8th of January. The ceremony, which was held in lecture room No. 3, was presided over by Vice-royalty. The attendance was very large, including a great number of the leading citizens of Montreal and the surrounding country. Many medical men from the city and different parts were also present. At 2.45 p.m. the Governor-General and Lady Aberdeen, accompanied by Captain Urquhart, A.D.C., and Mr. Hewitt, His Excellency's private secretary, arrived and was received by the Vice-Principal, the Dean and members of the Faculty in the library. From here a move was at once made for the large lecture room, and the proceedings began by His Excellency, who as visitor to the University presided, calling upon the Rev. Dr. Cornish to open with prayer.

Dr. Craik then delivered the following address on the History of the Faculty from its beginning in 1824 up to the present time.

Dr. Craik, Dean of the Faculty of Medicine, gave a very interesting account of the history of the Faculty. He said:

Your Excellencies, Governors, Vice-principal, Fellows of Corporation, Professors, Graduates, Undergraduates, Ladies and Gentlemen,—It is with a feeling of pleasure, amounting almost to exultation, that I rise as the representative of the Faculty of Medicine of McGill University, to welcome you as friends come to rejoice with us, at the completion and opening of our new and enlarged Buildings. To you, my Lord, and to Her Excellency the Countess of Aberdeen, we would beg to offer a special and a grateful welcome, inasmuch as you have been graciously pleased to honour us by your presence. We recognize in this act of

kindness, another proof of that large-hearted sympathy, which has caused Your Excellencies to interest yourselves in so many phases of Canadian life, and which has won for you the love and respect of a loyal Canadian people.

And this is an occasion on which it is fitting that we should rejoice. It is cause for gladness, that the progress of our Faculty has been such as to make enlargement of our buildings an absolute necessity; and it is no less a cause for gladness, that, when the necessity for increased accommodation was actually barring our further advance, the barrier has been removed and our onward progress again made possible.

There is much in the history and progress of a School or University, which may not inaptly be compared to the life of an individual. There is a period of comparatively helpless infancy in both; and if this period be survived, it is likely to be followed by one of growth and development, leading, under favourable conditions, to a more or less vigourous maturity, and to a long career of activity and usefulness. But there is also a reverse side to the picture. The Institution, like the individual, may die in its infancy from inherent weakness, from injury or from neglect; or it may drag on for a time a feeble existence, till it ultimately dies from continued stress of circumstances, or from the habitual neglect or ignorance of the laws of life and health, which apply no less to institutions than to living men and women. Let us see how far the picture will serve to illustrate the history and progress of our own School.

Soon after the opening of the old Montreal General Hospital in 1822, more than seventy years ago; four of its attending physicians, Drs. Robertson, Caldwell, Holmes and Stephenson, all of them graduates of Edinburgh University, being impressed with the necessity for providing medical instruction in this country, for students who might find it impossible to seek their education abroad; took steps to establish a medical school

in Montreal, after the model of the Medical Department of the University of Edinburgh, and bearing the same relation to the Montreal General Hospital in its clinical work as that of the Edinburgh Medical School to its Royal Infirmary.

After negotiations continued through 1822 and 1823, the School was successfully organized under the name of the "Montreal Medical Institution," and in the autumn of 1824, it commenced its active work, in a small wooden building then standing on Place d'Armes, on what is now the site of the Bank of Montreal. The number of students during the first session was 25, and the whole of the work of teaching was done by the four men whose names I have already mentioned, the departments of Anatomy, Physiology, Chemistry, Pharmacy, Practice of Physic, Midwifery and Diseases of Women and Children, Materia Medica, Surgery and Botany being divided as evenly as possible among them. The name of Dr. Loedel was at first associated with the others as Lecturer on Materia Medica, succeeded after a few years by that of Dr. Lyons, but neither of these gentlemen seems to have taken any active part in the work.

But the arduous and responsible work was not only done by the other four men, but it was well done; so well that it received official recognition at Edinburgh, two of its sessions counting for one, but giving it, nevertheless, a status as one of the publicly recognized Medical Schools of the day.

The work of the School thus begun in 1824, was continued unil 1828 with scarcely any change; the establishment of a French School of Medicine in the interval, having drawn away a number of students and prevented the anticipated increase. The average attendance for the first five years was barely 26, or only one more than in the opening year. This result was disappointing and discouraging, and, with less resolute men at its head, the Montreal Medical Institution would probably have died and been forgotten. But it did not die, and it has

not been forgotten. Not only did it continue to live, though under another name, but it was instrumental in preserving the life of its future foster mother, the University of McGill College, which was then in imminent danger of being strangled, almost at its birth, by adverse litigation.

It had become necessary that the University should assume active teaching functions within a certain date, then fast approaching, in order to secure its McGill endowment; and being unable to provide the necessary staff of teachers in the other Faculties, the struggling Medical Institution was asked, and gladly consented, to join the University as its Faculty of Medicine, and the crisis in the life of the University was thus successfully tided over.

The session of 1829-30 was the first under the new conditions, and it opened with 30 students. Its material resources, however, were not in any way increased, and for the next ten years its condition was, if anything, worse than before; but it was now the Faculty of Medicine of a University, acting by authority of a Royal Charter, and its battles were afterwards to be fought under its banner. This was no mean advantage. It gave prestige and courage to men who must otherwise have been worn out in a hopeless struggle; and gave distinction to the results of their labours by enabling them to procure for their successful students, the honour of a University Degree.

The political troubles which culminated in the Rebellion of 1837-39, had at that time begun to disturb the community, and interfered considerably with the progress of the School. It was obliged to close its doors from 1836 to 1839, until the political storm had blown over; reopening its classes in 1839-40 with an attendance of 28, a number actually less by 2, than when its connection with the University began ten years before.

Other changes soon followed the joining of the School to the University. Edinburgh at once accepted the Certificates of the Faculty on their face value at par, and the other British Schools almost immediately followed its lead.

In 1833 the first break in the ranks of the four veteran leaders occurred, by the death of Dr. Caldwell from fever The gap was temporarily filled by the appointment of Dr. Racey, and on his removal to Quebec in 1835, the late Drs. George W. Campbell and Archibald Hall were added to the staff, the former Lecturing on Surgery and Midwifery, and the latter on Materia Medica.

It was not until the session of 1841-42 that the real growth of the School began, when it opened with 39 students; and it is gratifying to know that three out of the four original founders, had the satisfaction of realizing it; for before the beginning of another session, two more of them had fallen in the fight. Dr. Stephenson died in 1842, and Dr. Robertson's health gave way to such a degree as to necessitate his retirement from active duty, his death occurring in 1844.

The filling of these vacancies in 1842 led to extensive changes in the Faculty, with a redistribution of Lectureships, amounting almost to a reorganization. Dr. Holmes took Practice of Physic and Dr. Hall took Chemistry, while there were brought into the Faculty, Dr. McCulloch in Midwifery, Dr. Bruneau in Anatomy, and Dr. Sewell in Physiology and Materia Medica. In 1845 Dr. R. L. MacDonnell was brought in, to preside over the new department of Institutes of Medicine; Dr. Fraser to take charge of the new department of Medical Jurisprudence; and Dr. Crawford to assume the duties of still another new department, Clinical Medicine and Surgery. Dr. Papineau was also brought in to relieve Dr. Holmes in Botany. In or about this year also, Dr. Scott was appointed Demonstrator of Practical Anatomy. Further extensions were made in 1849, when Clinical Surgery was separated from Clinical Medicine, Dr. Crawford retaining the former, while Dr. MacDonnell assumed charge of the latter, only to be replaced on his removal to Toronto in 1850, by Dr. Sewell.

I have dwelt somewhat in detail upon these changes, not so much on account of the personnel of the appointments;

but because they serve to mark the growth and development of the Faculty, in its efforts to keep abreast, and even in advance, of the progress of Medical Education on this continent.

But the growth and development of the School, was not only in the direction of the increase in the number of teachers, or of the subjects taught; but also in the additional time devoted to the preparation of the students. Almost from the beginning, the sessions were made six months' sessions, instead of sessions of four and a half months; and almost, also, from the beginning, the obligatory course of study, was changed to four years instead of three; and in this way the Faculty succeeded in establishing a reputation for thoroughness, which has stood it in good stead up to the present day.

I have already stated, that at the opening of the Medical Institution in 1824, the Lectures were delivered in a wooden building on the site of the present Bank of Montreal. Some time afterwards, the School was removed to a brick building, still standing, on St. George street near the corner of Craig. In or about 1845, the Faculty took possession of quarters in the Central Building of the University, now occupied by the Faculty of Arts, and continued to occupy these premises, until its removal to Coté street in 1851. Of the precise dates of the removals to St. George street and to the University Buildings, I am not as yet, in a position to speak with certainty; for the early records of the School and Faculty, are not as complete in detail as they might have been; but the dates of the appointments and other changes, as I have given them, are from the records, and may, I think, be relied upon. Of the dates and changes after 1850, I can speak with confidence from personal knowledge, for my connec- with the Faculty began, as a student, in that year, and has continued almost without interruption, until the present time.

Up to 1850, the increase in the number of students had

not been great. Commencing in 1824-25 with 25 students, the number, after twenty-five years, in 1849-50, was only 44, an increase of less than one in each year. From this time, however, the reorganized and strengthened departments, began to attract more students, and the session of 1850-51 opened with 53.

In 1851, the St. Lawrence School of Medicine was started, in opposition to our Medical Faculty. It had a strong staff of teachers, and its class-rooms were in the heart of the city. As the University buildings were at that time,—more than forty-three years ago,—thought to be rather remote from the centre of the city; it was feared that the more central position of the new school, would place our Faculty at a disadvantage; and after careful consideration, it was decided to move the classes once more back to the city. As no University funds were available to assist in this matter, three members of the Faculty, themselves advanced the money; and a substantial brick building was erected in Coté street, in time for the session of 1851-52, where the classes opened with 64 students.

This building, which is still standing in Coté street, served the purposes of the Faculty for twenty-one years: and in it occurred many of the changes and much of the progress, which have left their mark npon the history of the Faculty. It was here that, in 1852, all the Lecturers in the Faculty were promoted to the rank of Professors, Dr. Holmes alone having previously, I believe in 1843, been appointed the sole Professor. It was here also that, in 1854, Dr. Holmes was made Dean, the first in connection with the Faculty. Here also we had the happiness of receiving amongst us, as Professor of Botany and Zoology, our much loved and gifted Principal, Sir William Dawson, now retired, to whose great ability, zeal and untiring industry, the University, in all its departments, owes so much. Here in 1854, it was made optional with the student, to divide his examinations into Primary and Final, and here also, a department of Practical Chemistry

under Dr. Girdwood, was established in 1870, though it was not for some years later, that a Faculty Chemical Laboratory was provided. Here also in 1870, an optional Summer Session of three months was established, and in 1871 an optional course in Hygiene and Public Health, under the late Dr. George Ross, which was converted into a Professorship under Dr. Godfrey in 1875. During the twenty-one years of the occupancy of the Coté street Building, the number of students increased from 64 in 1851-52 to 139 in 1871-72; but the attendance in several of the years had been above 170, and in one year, 1866-67, it had reached 184.

But time will not permit me to dwell with as much of detail, upon the remaining years of the history of the Faculty; and I must content myself by referring only to the more important changes and occurrences of the last twenty-two years.

Owing to the increased number of students and the extension of the Curriculum, as well as to the growth of the Museum and Library; the Building on Coté street had for many years been inconveniently crowded; and the Faculty had been casting about for means of acquiring better accommodation. The opposition of the St. Lawrence School of Medicine had long since come to an end; indeed, the School itself could scarcely be said to have been born before it began to die; and the last vestiges of it had disappeared after a few years. Moreover, the city had spread greatly in the direction of the University Buildings; and, influenced chiefly by the advice of Sir William Dawson, the Faculty, in or about 1870, applied to the Board of Governors to be received again within the precincts of the College Grounds. There was at that time no available building on the College Grounds, of sufficient size to accommodate our growing Faculty; but the Governors generously offered to erect and place at our disposal, a Building suitable to our needs; and their offer being gladly accepted, the substantial Stone Building forming the front portion of the

present Block, was erected by them in 1871 and 1872, at a cost of $27,000, and placed at the disposal of the Faculty. The Building was unfurnished, and without equipment of any kind; but, nothing daunted, the members of the Faculty proceeded to furnish and equip it, from their own individual resources, at an expense of several thousand dollars; and our classes were opened in it in the autumn of 1872, with an attendance of 154.

Dr. Fraser, Professor of Institutes of Medicine, died in 1872, and Professor Drake, who had occupied the Chair of Clinical Medicine since 1868, was transferred to the Chair of Institutes of Medicine; a position which he filled with eminent ability. In 1874, owing to the failure of the health of Professor Drake, the position of Lecturer on Institutes of Medicine, was conferred upon Dr. William Osler, one of our own graduates; then jnst returned from a two years' sojourn among the great Schools and Laboratories of Europe; and in 1875, on the permanent retirement of Professor Drake, Dr. Osler was promoted to the vacant Chair. The assumption by Dr. Osler, of the duties of the department of Institutes of Medicine, was immediately followed by active Laboratory work, in Physiology, Histology and Pathology: and it is due to Professor Osler to say, that to the contagious influence of his example, together with his great ability and enthusiasm, is largely due, the greatly increased proportion of practical work, in all departments of the Faculty.

But the increase of Practical and Laboratory work in many departments, though it added greatly to the efficiency of the teaching, added also greatly to our expenditure; and we soon began to find ourselves crippled for means to carry on the work; and to add to our embarrassments, in 1882, we suffered what seemed to be an irreparable loss, by the death of our Dean, the late Dr. George W. Campbell; whose great influence and ability, for upwards of forty years, had been the mainstay of the Faculty.

But the darkest hour is often just before the dawn; and

while our Chancellor, Sir Donald A Smith, was listening to a eulogy on his late friend Dr. Campbell, and a recital of our needs, by the late Dr. Howard, he resolved to come to our rescue in a most effectual way. He offered to confer upon the Faculty no less a sum than $50,000, on condition that a like sum should be collected from the other friends of the University. I need not say with what alacrity we set about the collection of the stipulated sum; nor with what readiness and liberality we were met by many of our citizens; nor need I allude to the liberal contributions given by nearly every member of the Faculty. It is sufficient to say that the amount was soon collected and paid; Sir Donald's contribution was also paid over, and in 1883, the Faculty found itself relieved from its embarrassments, by a handsome Endownment of $100,000.

But our troubles were not ended, if, indeed, in some respects, they can ever be expected to end. Our session opened in 1883 with 200 students; and with the increased space rendered necessary by the enlargement of our Laboratories, our Building was full to overflowing. In 1884 the number of students increased to 227; and it became necessary therefore, to make immediate provision for increased accommodation. The Governors were, unfortunately, without funds to help us, and our only alternative, therefore, was to draw upon our Endowment for the enlargement of our buildings. This we did, with the consent of the Governors, to the extent of $23,000; and in the autumn of 1883, we opened our session with greatly increased accommodation, and a class of 234 students.

In 1884, we had the misfortune to lose the valuable services of Professor Osler; the University of Pennsylvania having offered him the Chair of Clinical Medicine. This offer, opened up to him so large a field for advancement in his profession in every way, that he was fain to accept it; and we parted with him with good wishes, but with very great regret.

In 1889 the Faculty suffered another great loss in the

death of its Dean, the late Dr. R. Palmer Howard. Dr. Howard's marked ability, untiring industry, unwavering integrity and unbounded popularity with all classes made him a man who could ill be spared; and the loss of his strong personal and professional influence for good, will be felt in the Faculty and in the community, until his generation shall have passed away.

Two other lamentable deaths in the Faculty, followed that of Dr. Howard in quick succession. Dr. Richard L. MacDonnell, Professor of Clinical Medicine, died in 1891; and Dr. George Ross, Professor of Medicine, and Vice-Dean of the Faculty, died in 1892. Of these two, it may safely be said: that there have probably never been in the Faculty, two men of greater promise or usefulness; and the loss of them, following, as it did, so closely upon that of Dr. Howard, was the cause of great grief and anxiety.

The late Dr. Howard had greatly at heart, the establishment of a Chair of Pathology, and lost no opportunity of pressing its claims upon friends of the University. It was not, however, until two or three years after his death, that, in 1892, the Faculty succeeded in obtaining what had been so long desired, by the appointment by the Governors, of Dr. Adami, from Cambridge University, England, to the newly established Chair of Pathology. With reference to this appointment, it is only necessary to say, that it places our Faculty, at least on a par with the best Schools of this continent, in this important department.

Other extensions of the Curriculum were made from time to time. Dr. Frank Buller was made Lecturer on Ophthalmology and Otology in 1878, and was promoted to the rank of Professor in 1883. A Chair of Gynæcology was also established in 1883, with Dr. William Gardner as its first occupant; and a Department of Laryngology under Dr. George W. Major, was commenced in 1882, and erected into a Chair in 1893, with Dr. Major as its first Professor.

In 1894, Summer Sessions were abolished, and the Ordinary Session of six months, was changed to one of Nine Calendar Months.

From 1884 to 1889, the number of students remained nearly the same, the number in 1888-89, being 227. In 1889-90 the number increased to 256; in 1890-91 to 261; in 1891-92 to 291; and in 1892-93 the number reached 312.

We were again face to face with the old difficulty of overflowing buildings, and had again to look for the means of providing increased accommodation. Our difficulties in this instance, were even greater than in 1885; for to afford room for additional buildings, it would be necessary to purchase the land adjoining the college property, and which was valued at $25,000. The required new buiidings were estimated to cost $30,000, making a total of $55,000 required to serve our purpose. We laid our case before the Board of Governors, asking them to acquire the necessary land; and to allow us to borrow from our Endowment Fund the $30,000 required to erect the necessary buildings. What was our surprise and delight, when Mr. John Henry Molson, (now our senior Governor), with scarcely a moment's hesitation, asked to be allowed to relieve us of the whole burden, by placing at our disposal the munificent sum of $60,000, a sum greater by $5,000 than the whole estimated cost?

It is difficult to find words fitly to characterize such princely generosity. To it we owe the erection of the Building in which we are now assembled, and the ground upon which it stands; and to it also, we owe the comfortable accommodation of the rapidly increasing number of students; for last year the number was 350, and this year it has already reached 400.

It is matter for regret that Mr. Molson is not with us to-day, to receive in person the thanks of the Faculty; but he is well represented by Mrs. Molson,—that part of him which he himself is proud to own as his better half; a Lady from whom the University has also in other Departments received rich Benefactions; and our thanks could not possibly be conveyed to Mr. Molson through a more welcome channel.

It remained only for our Chancellor, Sir Donald Smith, at the Convocation with 1893, in one of his many acts of magnificent bounty, to fill our cup full to overflowing, by the endowment of the Chairs of Pathology and Hygiene, with the sum of $50,000 each; thus placing our Faculty, so far as can be foreseen, in a position to carry on and to extend its work without financial anxiety.

I fear that I have wearied my audience, by my long and somewhat detailed account of the origin, the struggles, the growth and the ultimate triumph of our Faculty; but I have thought that on an occasion such as this, the History should be made fairly complete; and I shall only ask of you, to bear with me a minute or two longer, while I endeavour to point its moral.

We may be asked, what have been the secrets of our success? There have been no secrets. We have succeeded, because we have tried to deserve and to achieve success; and when taxed beyond our powers, well tried friends have helped us; and we have been guided by those principles, which should always command success in every worthy enterprise. We have, with honest purpose, taken advantage of such circumstances, as were useful and necessary in our work. The large field for clinical work and observation, which our school has enjoyed since its commencement, in the wards of the Montreal General Hospital, has been an important factor in our success; and supplemented, as it now is, by an equally large field in the wards of the Royal Victoria Hospital, our Faculty and Students have at their command, resources in this direction which cannot anywhere be excelled. Moreover; the interests of the Faculty have generally been guarded by practical and far-seeing men; men not merely learned in their profession, but endowed with sagacity, administrative ability and business tact; qualities without which, no enterprise, however highly favoured, can long hope to succeed. It has endeavoured also, to supply to the community, that of which it was really in need, and which was, therefore, always in demand; and

has striven to make its graduates, sound, sensible, well-trained and well-equipped men; fit to be entrusted with human life and health. It has never allowed itself to lower its standard, below that which would test the powers of average men; nor to raise it so high, or to hedge it about with such unreasonable requirements, as to keep out those, that, with patient and intelligent help, will often from dull beginnings, develop into the brightest ornaments of the Profession. And, lastly, we have always had faith in our Faculty and in our University. When we have met with misfortunes, they have not made us unduly despondent; nor when success has smiled upon us, has it made us arrogant; but we have kept steadily in view, the time when our Faculty should leave doubt and uncertainty behind, and look forward to an assured and prosperous future. We hope and trust that that time has arrived; and we hope also, that the future of the Faculty and of the University, shall be to the past, as the bright rays of the noonday sun, to the feeble and uncertain light of a beclouded moon.

I have now the honour to present to Your Excellency, on behalf of Mr. Molson, and on behalf of the Faculty of Medicine of McGill University, this key. It is only a modest little key, but in a figurative sense, it may do great things; if it shall serve to open our doors to public confidence and appreciation; and to open them also, in sending out for generations to come, able and worthy graduates; to carry health and help to suffering humanity, and to be a source of pride and honour to their Alma Mater.

His Excellency, who was loudly cheered on rising, then spoke as follows:

The opening remark of the address to which we have just listened reminded me that in order adequately to describe the component parts of this distinguished and representative audience quite a considerable category of designations would need to be employed. Unfortunately I omitted to take a note of the list, and, therefore, I shall adopt the safe

course of addressing the audience under the time honored and comprehensive title of ladies and gentlemen.

To-day we are setting up one of the landmarks of the progress and extension of this University, and that, too, in a department which in the most eminent and essential manner entitles a seat of learning to the noble designation of University, because this great science, this great art which we are celebrating to-day is emphatically of world-wide application, and is limited only by the needs of the human race. So wide is its scope, so numerous are its ramifications, that it is indeed necessary to employ a common language, recognized and understood by all its members, in order that the application and adminstration of the science may be duly provided for and carried on.

Well might the dean say that the occasion is one for thankfulness, and I feel that, having the honor of being the official visitor of the University. I am only voicing the thoughts of the unofficial visitors who are here in such large numbers when I say that we heartily congratulate the University and those on whom the management of its affairs especially devolves, upon this interesting and notable occasion. Those who belong to the medical profession may well be proud of it, and we who are outside of the profession—outside, at least, except in the important particular of furnishing the material upon which its votaries are entitled to perform their experiments, we, too, are proud of the profession, not only because of its fame and utility, but because of the help and encouragement which it gives to the development of all that is unselfish and noble and heroic. That is a theme which might well be enlarged upon, but the mention of which is like a truism. On such an occasion as this we may at least recall, in passing, the grounds for these feelings and expressions of thankfulness and congratulations the occasion itself naturally calls for, and while I am touching upon that aspect of the matter I cannot refrain from referring to the contribution

which has been made in the literature of to-day to this particular topic ; I mean the nobility of the medical profession. I refer to a work which those who have already read it will admit may be counted as a classical contribution to English literature, the book called " Beneath a Bonnie Briar Bush," Characters appear in that book which we shall remember and claim as friends, and among the most eminently attractive of them is the parish physician of the district which the story describes, Dr. William Maclure. The narrative brings out in his character the typical qualities which we look for in the true physician, and one of these I cannot help alluding to. The life of a poor woman, the wife of a labouring man, is despaired of. The husband, who has rarely been known previously to open his mouth in speech, is moved by his distress to make an earnest and touchingly urgent appeal to the doctor to do something to save his wife. The doctor dares not give him any encouragement ; he knows no means by which her life can be saved except by an operation by a famous and skilful surgeon, but that is a matter of a hundred guineas, and where is the fee to come from ? He finds, however, a farmer—a Scottish farmer, too—who is prepared to provide the necessary payment. The next morning, in answer to a telegram, the Queen's surgeon appears, and the two doctors drive to the cottage. But a river has to be forded ; it is in flood, and in passing through it the great surgeon, though no coward, is affected by the terrific surging, and swirling of the waters over the ford, and protests against going further. " We shall be lost," he cries. His companion, the country doctor, replies, " Lost you may be sooner or later if you shirk your duty, but cross the river this day you shall." They do cross it, and the operation is performed with success. When the doctors parted the poor people are delighted by hearing the great surgeon say to the local doctor : " I am proud to have met you ; you are an honor to our profession." The author adds that the surgeon declined to take the fee, but, perhaps, this was an instance of mere eccentricity.

The dean of the faculty, in his most interesting and admirable *resumé* and description of the various events which have culminated in this noble occasion, alluded to the fact that troubles will occur, even in connection with the medical department of a University. I presume that the Dean referred, not to medical troubles, but to financial troubles in relation to the ever-increasing needs of a great institution. We have already had such a splendid illustration of noble generosity, especially associated with the names of Mr. Molson and Sir Donald Smith, that we can but speak in terms of thankful congratulation, and in terms of cordial appreciation such as have been so appropriately addressed to the lady (Mrs. Molson), who has graced the occasion with her presence to-day. But, after all, it may not be out of place to remember that the work has not reached finality. There may be the need and the opportunity for future benefactions. The University is not grasping or voracious; it only asks for what is needed. It indeed occupies the attitude which was well expressed by a worthy Scotch woman, who when asked what her requirements for a livelihood were, replied that she would be content with "a competency," and, when the further question was put, "what do you mean by a competency?" answered, "just always a little more than I have got"—a most reasonable and natural desire on the part of any active University.

We are looking forward, I am sure with great interest, to the next phase of these proceedings. I suppose we ought not to have grudged Dr. Osler to Baltimore; as a matter of fact probably we do grudge him; but if within the borders of the United States they could not find the man required for such a post, it was perfectly natural and reasonable that they should come to Canada. That is a principle which I think may always be safely adopted,—that where a person is required for any particular post, you should search not only in the country in which the institution exists, but the world over for the right man to fill the right place. I am sure that in the case of Dr. Osler

they have succeeded, and we may at least claim the satisfaction of the fact that Dr. Osler, whose career we are sure will become more and more brilliant, went through the stages of his academical life in the University of McGill.

I cannot conclude even these few informal observations, addressing as I am among the audience a band of young men to whose career we look forward as one which will be a credit to themselves, their University, and their country, without referring to the fact that we have had brought before us during the past few weeks a notable and eminent example of all that goes to make up a noble career—a stimulus and an incentive, especially to young men equipping themselves for the battle of life, to that devotion to duty and that sacred ambition which seeks, no mere honor and distinction, but the welfare of the human race, and of the country in which God has placed us.

Sir William Dawson being called by His Excellency said that for thirty-eight years he had enjoyed the privilege of following with interest and pleasure the growth and progress of the Medical Faculty, and of taking a certain share in promoting its interests in connection with the University. He had seen its growth from the time when there were 50 or 60 students in the old brick building on Coté street to the present, when there were 400, with the magnificent class-rooms and laboratories which were opened that day. This great growth appeared to him to have been fully merited by the earnestness and the ability of the Deans, who had control of the Faculty, and their colleagues, all through that time. He did not think that in any educational work with which he had been connected he had ever met a more earnest and devoted body of men than those in the McGill Medical Faculty. Another element which he thought had contributed very much to the recent benefactions to the Faculty was the character of the graduates it had been sending out. It had produced many distinguished professional men, of whom Dr. Osler might be taken as a type and a most brilliant example. It had

also sent out a very large number of men who might be termed ordinary and useful practitioners who, though little known to fame beyond their own localities, were of priceless value to our country. Those who had lived in Canada for any length of time and had visited the outlying districts knew how much of the comfort of the people depended on the thoroughly well-trained medical men of the country. His Excellency had mentioned a touching Scottish example, but hundreds of such could be found in Canada. In this work of supplying able local practitioners the McGill Medical School, without disparagement to any other institution, had, he ventured to say, borne a very large share. The medical graduates of McGill were to be found in all parts of the Dominion and everywhere were regarded as trustworthy professional men. The medical student of to-day was the medical graduate of to-morrow, who was to be the most trusted adviser in the most serious crises of life and to spend his life in doing all that he could to mitigate suffering and to save life. Even if a medical man's work were with him a professional work, it was a great and glorious mission, in which his heart, as well as his interest, had to enter, in order to make it the profession which it ought to be, and to ensure the greatest success. Sir William then congratulated Dean Craik on the event of the day and on the presence of the Governor-General and Lady Aberdeen. He thought that they all had reason to congratulate themselves upon having been able to borrow their old friend Dr. Osler for a little while to speak on those original investigations in medical science which are doing so much to alleviate suffering and to prolong life, but which are still in their infancy and hold out the most inviting prospects to original research. He hoped that every student present would bear in remembrance and carry out in his life the great object of delivering man from being the victim and slave of his surroundings and of making him what his Creator intended, their lord and master. In this connection he need scarcely say that he fully con-

curred in the suggestions of the Vice-Principal with reference to the welding together of the Faculty of Arts and Medicine in such a manner that medical students and graduates might be better prepared to comprehend the scientific principles of medicine and to be leaders in the general enlightenment of the community.

THE

Montreal Medical Journal.

VOL. XXIII. FEBRUARY, 1895. No. 8.

OFFICIAL OPENING OF THE NEW BUILDINGS OF THE MEDICAL FACULTY OF McGILL UNIVERSITY.

We devote this month a considerable amount of our space to an account of the proceedings attending the official opening of the new buildings of the Medical Faculty of McGill University. To all our readers this account will be interesting matter. It will be especially so to the many hundreds of McGill graduates scattered over various parts of the world.

The able address of Dr. Craik tells in a very graphic manner the struggles, early and recent, which the Faculty has had to contend with since its foundation in 1829.

Among many factors that have contributed to the singularly successful upbuilding of the Medical Faculty of McGill University, we would mention in the first place that the establishment of the school was not founded for any selfish object, but to afford on opportunity to the young men of the country to acquire a solid education in medicine, and thereby meet the pressing wants of a poor but rapidly growing colony. From the very first efficiency was the watchword. Futher, the Faculty has always been fortunate in having at its head able, wise and energetic men.

The progress of the Faculty owes also much to her long

list of graduates, who in various parts are filling positions of honour, and who always remain true and loyal sons of their Alma Mater.

The success of the University in general, and the Medical Faculty in particular, is to all medical graduates at least, a matter of personal concern. Much of the fame of any University comes not from the work of the professors, be it ever so good, but rather from the quality of work performed by the graduates in their different spheres.

For some time previous to the semi-centennial celebration in 1882 of the foundation of the Faculty, it was recognized that a new condition of things was arising in connection with medical education, that the day for laboratory instruction in all possible departments was at hand, and that the future instruction should be more practical and less didactic.

The late Palmer Howard, in his address on the occasion, called very special attention to this subject and pointed out the necessity for endowments, in order to enable such methods of instruction to be carried out. His appeal for help was at once responded to by Sir D. A. Smith, who offered the sum of $50,000, provided the Faculty collected a similar amount. This was soon an accomplished fact and the Faculty were, with the $100,000, at once placed in a position to give a course more in conformity with modern requirements. The splendid generosity of Sir Donald A. Smith was the first instance in this country, or elsewhere, of the recognition of the claims of medicine to support through private generosity.

As referred to in Dr. Craik's address, although the first, this has not by any means been the last generous recognition on the part of Sir Donald A. Smith.

Through the great liberality of Mr. J. H. R. Molson, the Faculty have again been enabled to further extend their means of meeting the ever advancing requirements of modern medicine.

DR. OSLER'S ADDRESS.

On account of Dr. Osler's varied and brilliant gifts, and from the distinguished position he so worthily fills as a teacher and thinker in medicine, he has naturally been called upon on many occasions to deliver public addresses at medical schools and associations throughout the continent. Many of these addresses possess great merit, but we think his latest effort is in many respects the ablest of all. It is brimful of wise and stimulating sayings. In a few words, a rapid review is given of what medicine has done to prolong life and relieve human suffering and misery. The great advance of the immediate past is an index of what the future has in store. A generous tribute is paid to the memory of his former teachers and colleagues who have passed away. The development of research is pointed out as, after all, the greatest function of a University if it is to fulfil its highest work.

The whole address is full of vigourous and advanced thought, worthy of the speaker and the occasion. It is refreshing reading in these days when quackery in its various cloaks is so rampant and when people, even of the highly educated kind, bow before it.

Obituary.

DR. ALFRED L. LOOMIS.

We greatly regret to have to record the death of Alfred L. Loomis, M.D., LL.D., of New York.

Dr. Loomis died at his residence in New York on the 23rd January from pneumonia.

For many years he has occupied a leading position in New York as a consulting physician and was well known, through his writings, which especially deal with diseases of the respiratory system. He was the author of a work on "Physical Diagnosis," which has run through ten editions; of a text book of "Practical Medicine," published in 1884; of a special work on "Diseases of the Respiratory Organs, Heart and Kidneys."

For upwards of 30 years he was physician to Bellevue Hospital. He was Professor of Medicine in the University of New York since 1868.

Last year he was President of the Association of Physicians, one of the highest of the professional honours which can fall to the lot of an American physician.

Medical Items.

—A very grave form of measles is epidemic in some German cities at present, the mortality from this disease alone amounting in some places to more than a tenth of the whole.

—Professor I. Burdon Sanderson, hitherto Professor of Physiology in the University of Oxford, has been appointed to succeed Sir Henry Acland as Regius Professor of Medicine in that University.

—Wölfer, of Graz, succeeds Gussenbauer in the chair of surgery in the German University of Prague. Wölfer, formerly assistant to Billroth, is best known to the profession generally as the author of a very able work on the diseases of the thyroid gland.

—Dr. Hermann Weber has bequeathed the sum of $12,500 to the Royal College of Physicians, London, to found a prize for the best work on pulmonary consumption. The work may deal with any phase of the subject—etiology, pathology, prevention or treatment. The prize has been founded in reverence for the memory of Dr. Parkes.

—The *Colorado Climatologist*, a neatly printed and well edited journal, is the latest addition to the medical periodicals of America. As its name implies it is devoted chiefly to literature bearing on the influence of the Colorado climate on the course of pulmonary tuberculosis. It is edited by Drs. Charles Manly and J. N. Hall, of Denver, Colorado.

—The Ontario Medical Council elections have resulted in a considerable change in the members of that body. It is a matter of regret that the new council will be deprived

of the experience and knowledge of such men as Dr. Philip, of Brantford ; Dr. Ruttan, of Napanee, and Dr. Bergin, of Cornwall. The latter was a member of the Council since its inception in 1870. His intimate acquaintance with professional education, acquired through a prolonged experience, made his name a power in the deliberations of the council. Among the new members that much may be hoped from we would mention Dr. Graham, of Brussels, and Dr. Reddick, of Winchester. Both of these gentlemen have for years occupied prominent positions as practitioners, and both have taken a great interest in all that relates to the progress of our profession.

A FUND FOR A BRONZE STATUE TO CHARCOT.—The pupils and former associates of Charcot in Paris and throughout France are engaged in raising a fund for the erection of a bronze statue of him in the Sàlpêtrière. This movement is receiving cordial and material support in Germany, England and Italy.

It has therefore seemed desirable to the Neurological Societies of New York and Philadelphia that the profession in America join in this testimonial, as an evidence of the eminent services of Charcot in neurology and medicine. The undersigned have been appointed a committee to bring the matter to the attention of the profession and to receive contributions, which will be duly acknowledged and forwarded to the central committee in Paris.

We sincerely hope that the profession in Canada will contribute their mite to this fund.

It is requested that all who desire to contribute to the success of this undertaking send their subscriptions to the members of the committee nearest to them or direct to the treasurer, Dr. C. A. Herter, 819 Madison avenue, New York.

E. D. FISCHER, M.D., E. C. SEGUIN, M.D., M. A. STARR, M.D., C. L. DANA, M.D., C. A. HERTER, M.D., for New York.

S. WEIR MITCHELL, M.D., WHARTON SINKLER, M.D., CHAS. K. MILLS, M.D., for Philadelphia.

J. J. PUTNAM, M.D., P. C. KNAPP, M.D., for Boston.
WILLIAM OSLER, M.D., for Baltimore.
ARCHIBALD CHURCH, M.D., for Chicago.
C. H. HUGHES, M.D., F. R. FRY, M.D., L. BREMER, M.D., for St. Louis.
JAMES STEWART, M.D., for Montreal, Canada.
E. B. ANGELL, M.D., for Rochester.
J. W. PUTNAM, M.D., for Buffalo.
THEODORE DILLER, M.D., for Pittsburgh.
HOWELL T. PERSHING, M.D., for Denver.
J. D. HIRSCHFELDER, M.D., for San Francisco.

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A MONTHLY JOURNAL OF MEDICINE AND SURGERY.

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The volume commences with the July number, but subscriptions may begin at any time.

Address

THE MONTREAL MEDICAL JOURNAL CO.,
Care of GAZETTE PRINTING CO.,
MONTREAL

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXIII. MARCH, 1895. No. 9.

Original Communications.

THE CLIMATE OF CANADA AND HOW IT AFFECTS US.*

By WM. H. HINGSTON, LL.D., D.C.L., M.D., L.R.C.S. Edin., etc.

It may be said. in a general manner, by way of preface, that the climate of a country affects the stature, strength and complexion; that it causes sometimes, sometimes cures, and often modifies disease; that it sometimes prolongs, sometimes shortens life. But the influence of climate proper is most evident where its effects are least interfered with by other circumstances. The aborigines therefore of a country, and those who live much out of doors, are those who feel most the influences of climate.

Climate, in its most restricted sense, is but one of the many causes which affect man. Neither here nor elsewhere, therefore, can climate be considered without those other influences of great potency—the relative conditions of wealth and comfort.

A knowledge of the physical geography of a country is necessary to those who would wish to be familiar with its climate, and ours doubtless is well known to you. (While using the second person "you," in this paper, I mean you, most welcome visitors from across the line; "we" will apply to us on this side. This is by way of avoiding fre-

* Read before the American Public Health Association, September, 1894.

quent repetitions; and not of idly marking geographical boundaries, or territorial limits, or national distinctions, for science—and especially sanitary science—knows them not.)

And first as to extent of country: great as is yours, this is greater; not exactly in land area, but in land and water superficies. Canada is greatly diversified in surface and physical characters; yet local diversities disturb but little the general harmony of the whole. We have our Apallachian chains of mountains, and feel their influence; so have you. We have our bold Rockies, so have you; and for your Alaska we have the Arctic and Hudson Bay regions. While you have your Mississippi and Missouri, we have our St. Lawrence and Ottawa; while you have the Green Mountains of Vermont, we have their eastern extension—the mountains of Notre Dame. The Laurentians on the north are especially ours; and, protecting us in great measure from the inclemency of the north, even to the Arctic Ocean, secure to us a habitation and a home. The water-sheds are in some instances common to both countries; and the chains of lakes are, some of them, yours and ours in common; but many of them are ours alone. Those sloping towards the east feed the mighty St. Lawrence, which, when passing the city of Montreal, travels, at ordinary low water, at the rate of twenty million cubic feet per minute; and at high water at forty to fifty million cubic feet per minute. What a mighty factor is there here for sanitary purposes! When, swelled by numerous tributaries, the St. Lawrence reaches the Atlantic, it pours its contents at the rate of one hundred million gallons per minute.

The small lakes are endless in number, especially in the extreme north. These large fresh water seas, contain nearly one-half of all the fresh water on the surface of the globe.

To a practical eye, this profusion of lakes would mean facilities for commerce, and a ready means for passing from one part of the country to the other; but to hygienists

they have other purposes. They moderate the temperature both of summer and of winter, and render pleasant, healthy, and agreeable the climate of the country. Another feature in the physical geography of the country to which I shall allude is the slight degree of elevation of the land above the level of the sea. You, visitors from Mexico and South America, and the southern parts of North America, when at home, tower above us by nearly a thousand feet. We are content to occupy a lower level—an average elevation of something like one to three hundred feet above the sea is sufficient to satisfy us. The city where we meet, is at low water, but eighteen feet above the level of the sea. But the low altitude of which I speak, and with which we are content, is favourable to this climate and to vegetation. Were our plateaus, on the north coast, as elevated as some of yours, vegetation, if at all possible under such condition of height, would be confined to mosses; and animal life would be limited to a few hardy, thick-furred, thinly scattered animals. All our slopes toward the ocean are long and gentle; many of yours are short and rapid. While our low elevation on the north is most favourable to us, we are grateful to you for your Mexican Cordilleras and the bold Rockies, which temper the soft winds, loaded with watery vapour, which reach us from the Pacific, which, without these interposed mountains, would enervate us. Were the configuration of this portion of the continent otherwise than what it is we should be exposed to vicissitudes of temperature from the northern Atlantic on the one side, and from Pacific on the other, too sudden and of too great a range for man, with all his ingenuity, to endure.

That a climate begotten of our latitude and longitude, or of the physical configuration of the surface of our land, is not destructive to vegetable life, you may gather from the magnificent forests and rich herbage which cover the soil. Many millions of cubic feet of our oak, elm, beech, maple, walnut, linden, ash, hickory, pine, spruce and cedar are being steadily conveyed to your country to be there

fashioned to suit an endless variety of purposes. Even our cereals and fruits—though the political exigencies of the two countries seem, so far, to render their admission difficult—are tempting to you. Canada, as a wheat growing country compares favourably with Central Russia. Even before the valleys and plains of Manitoba and the North-West were open to us, the Richelieu, and other districts bordering many of the tributaries of the St. Lawrence, produced wheat of a whiter and finer description than that of Great Britain, as rich, almost, in gluten, as that grown on the shores of the Mediterranean, and in those districts, growing so rapidly, as to be in ear nine weeks after it had been sown. Even rice is found growing wild in our northern climate; and Indian corn (the maize), with its stalks abounding in sugar; while melons, pumpkins and squash, the products, it is supposed, exclusively of hot climates, grow luxuriantly all over the southern, western and central parts of the country.

The variegated forests and their great vigour and beauty may be taken as evidence of the humidity of the atmosphere and of the fertility of the soil. Everywhere is found a mixed forest in rich luxuriance; and plants with shrunken leaves, or trees with feeble stems will nowhere be found within our territory. At the north, it is true, you will find the leaves rolled, as it were, into pin-like form, so that they may intercept, but little, the oblique rays of the sun.

As are our vigourous forests, so are our inhabitants, in the qualities of health and vigour.

It would serve no purpose to speak of our warm days or our cold days; ofour dry weather; or of our moist weather. Our climate is drier than is that of some countries; it is moister than is that of others; and it is colder than in most countries, yet would we not wish it warmer. It is warm—too warm sometimes for our comfort—for two months of our summer; but the heat is dry and easily borne, and we regret when the falling leaves of autumn remind us of its close.

The electrical condition of the atmosphere is remarkable; the atmosphere almost always exhibits a sensible electrical state, be that positive or negative. In clear weather, the atmosphere is vitreous, or positive; and during hail or snow-storms that condition is usually preserved. When clouds drift with violence, the electricity often becomes negative; but in clear frosty weather, and in winter, the electrical condition is positive. The electric condition has much to do with the well-known energy of the inhabitants in stimulating them to exertion.

Our warmest weather is grateful to the senses. The quality of the atmosphere is such that its heat preserves the temperature of the body by exciting the functions of the sudoriparous glands of the skin; and, by bathing the body with moisture, it lowers, at the same time, the temperature of the surface by rapid evaporation. A temperature of 85°, in Canada, is more agreeably borne than is a temperature of 70° in a damp atmosphere, as that of England. The heat of the summer does not continue long enough to produce those disturbances of the gastro-intestinal system which are so common in hot climates generally; while the malignant and putrid disorders of those countries are here unknown. Affections of the liver are not common even in hot weather, and are not troublesome to the temperate (I mean the temperate in eating as well as in drinking).

But judging from what you observe from seeing pictures of our ice-palaces exhibited periodically, you would be disposed to think that we had to do with winter's cold rather than with summer's heat. The human constitution is not affected here as it is in countries rendered cold by their great altitude. Here the cold is exhilarating and does not lead to early destruction. What is dreaded in other countries, where cold is severe, is moisture; here the air is dry. We have remarkable instances of persons exposing themselves during long marches to a temperature of 40° to 50° below the zero of Fahrenheit without inconvenience. In the earliest period of our history, when our Canadian

settlers were exposed to intense cold during the whole winter, they managed, provided they could keep off the wind, to pass the cold season in comfort. Our cold does not enervate or depress; on the contrary, while it pinches it invigorates and disposes us to activity.

The long continued influence of our cold has not yet produced that congelation of the imagination which Dubois prophesied. Your own esteemed traveller, Dr. Kane, whose memory we here venerate, noticed the same thing among our neighbours, the Esquimaux, to the north of us, whom he described as a "happy race of people, happy so far as a contented and an elastic temperament go to make up happiness." Yet is the cold they endure greatly in excess of ours!

The influence of our springs and autumns is much like that of those seasons elsewhere. The ratio of mortality in Canada is low. When Canada was a military station it was, with the exception of Malta, the healthiest station under the British crown, and soldiers, debilitated by residence in other climates were sent hither to recruit their strength and vigour. The valuable statistics furnished by the surgeons of the American Army show your stations to be healthier as they approach the great northern lakes, which separate, yet join, your country and our own.

Most countries, indeed most sections of countries, can boast of some malady peculiar to the soil; but Canada can make no such boast: she has no disease exclusively her own. The fevers met with—the intermittent, the remittent, the bilious remittent—are mild. The first of these is becoming rarer and rarer, and in a few years bids fair to be unknown. It is still met with in the west, but according to our highest authorities is unknown as far east as Montreal. The ephemera, as their name implies, are of a mild type. They have nothing to do with the country in which they occur, but may arise anywhere from drunkenness, exposure, etc. With a poetical license I might say of them with Longfellow, "They can be cured by wearing a spider hung round one's neck in a nutshell."

Consumption exerts its baneful influence here as it does in most climates; yet is Canada a country favourable, at certain seasons, and under certain circumstances, to an arrest of the disease. It is admitted that temperature does not alone exert that marked controlling influence on the progress of phthisis which has been long attributed to it. We have come to regard, as the most desirable atmospherical condition for the consumptive, the condition of dryness; and next to dryness, equability of temperature—uniform for long periods, and not disturbed by sudden or frequent changes. These conditions are met with in various parts of Canada, especially in the higher and western portions. This question, however, is too vast to permit me to more than glance at it in this short paper.

I said a moment ago we had no disease peculiar to Canada. There is a disease, however, insignifcant in extent, though heartless in quality, which is met with on the Miramichi river in one of our Maritime provinces. I allude to the little colony of lepers confined to the lazaretto of Tracadie on the New Brunswick coast, where the inmates are destined to a life of isolation. The disease is not indigenous, but was brought there by a couple of shipwrecked sailors many years ago.

The healthiness of the climate of Canada may be fairly computed from the tables of life insurance. British companies charge a less premium on Canadian than on British lives up to the age of 37; after that period the balance is the other way. British underwriters recognize, and with wisdom, a severer strain on the human constitution in Canada than in Great Britain.

If the health of the climate and other conditions may be gathered from the natural increase of the population, then is Canada one of the healthiest of countries I might for the moment admit, with Mr. Sadler, that the prolificness of human beings, otherwise similarly circumstanced, varies inversly as their numbers; or, in other words, that the prolificness of a given number of marriages will, all

other circumstances being the same, vary in proportion to the congestion of the population, so that the prolificness should be greatest where, in equal spaces, the numbers are the largest. This view of Mr. Sadler is not borne out in Canada, where the birth rate has maintained its high ratio, even with numbers, to a district relatively increased.

This is not the time nor the place to speak of that disturbing element which, in this mixed assembly, I dare not even name, beyond qualifying it as the demon of prudential desire of limitation, which does its cursed work in certain sections of this land—will you pardon me if I say, on the authority of some of your own distinguished medical writers, in many and large sections of your land. I said certain sections of this land, and certain sections only, for in this, our country, while there are isolated spots, here and there, in certain of our cities into which the foul thing has crept, there are hundreds of thousands of miles where the nameless and shameless crime is unknown. The natural increase of one section of our population—the French section—is almost unparalled in the history of the world, doubling itself in some districts in fifteen or sixteen years. The offspring of sixty thousand of a century and a quarter ago are now counted by between two and three millions. May not this pregnant fact be due to some extent to another fact to which I may allude: the women lived happily at a time when uterine troubles were not fashionable, and when the ovaries and tubes were not considered *de trop*. Among the English-speaking population the natural increase is also large, much indeed what it is in the more fruitful parts of Great Britain, Ireland and Russia.

Some little uneasiness is being expressed at the large death rate among children. No doubt the death rate is large, and especially in cities; but it is large, chiefly because the birth rate is large; and not from any inherent vice of constitution; or vitiated environment; or climatal condition. Dr. Larocque attributed the high death rate in children to overfeeding, and to the use of food of too strong

and too stimulating a quality. Among the poor, it is not unusual to find a child as soon as it can eat alone, seated at the table with its parents, and partaking of food of which grease and fat meats form a large part. Strong soup—from which it would be heresy to remove the supernatant fluid fat—is a favourite food. As a result, gastric disturbances are not uncommon.

Unlike other cold countries the larger mortality is not in winter, and this is an emphatic refutation of the assertion that our Canadian winters are trying seasons. Winter is our healthiest season. If we deduct frost-bites, and other injuries incidental to the season, the small mortality in winter would be still further diminished. In the ratio of mortality autumn comes after winter; spring next to autumn. The highest mortality in city and in country is in the summer season. In cities, this is easily accounted for; a certain degree of heat evolves a certain quantity of deleterious gases, and every additional degree evolves an additional quantity, and perhaps a new kind or quality of deleterious gas. Thus 70° will cause the evolution of more than 65°, and 75° more than 70°, and so on. In the months of July and August diarrhœtic complaints are common; but these must not be attributed to the elevated temperature so much as to the result of improper alimentation at that season; especially by ill-kept food, and markedly milk. Obtaining fresh milk is not always easy to poor people —it was not easy even to our own Princess Alice in her German home, where she says she found fresh milk difficult to obtain, and very expensive.

As a residence for consumptives, many parts of Canada present advantages not possessed by other countries. I have said that for this disease an equable temperature and dry air are of the first moment, and in no other part of the world can these qualities of atmosphere be more certainly obtained. The favourite resorts of Europe are alternately exposed to the hot winds, on the one side, and to the icy chills from the mountains, on the other. With us there are few local disturbing features to upset the general whole

There are certain conditions of the lung in consumptive patients which are especially benefited by the climate of Canada: I allude to those conditions of imperfect expansion, at an early period; and of consolidation, at a later period. Early in the disease, when deposition of tuberculous matter takes place; or, rather, before the stethescope can clearly detect its presence; when the natural respiratory murmur becomes less distinct, or interrupted and halting, and not continuous, as in health, the dry stimulating climate effects much. Even in the stage of deposition and induration—the first stage of recognizable disease—where as yet no cavities exist, and where there is no undue bronchial irritation, the winter climate of Canada is of great value. Many of the more eminent physicians of Europe have recognized this quality in our climate, and have often-times sent patients hither. The class of patients, formerly sent on whaling expeditions, is now sent to winter in Canada, where the advantages of temperature are recognized, and where the comforts of life are easily obtained. It would detain you too long to point out in detail the localities, in this country, to be chosen, and to be avoided, by the consumptive; but I shall be glad to present to any member of the Association, who desires it, more extended observations on the subject generally, which are embodied in my work on this climate.

I have hitherto confined myself to the influence of climate *pur et simple.* But climate means all the circumstances under which we live, or as it is defined by a French writer, *les conditions dans lesquelles nous vivons dans chaque lieu.* The influence of the climate, therefore, cannot be separated from the habits of the people. That part of the subject, however, is too vast, and ramifies in too many directions, to permit me to enter upon it. Let me say, however, that while luxury is enjoyed by a privileged few, the humbler classes, especially in our country districts, live frugally, temperately and well; and although they do not always give outward evidence of wealth, they have sufficient for all their legitimate wants; they live in comfort and

exhibit a happiness and contentment born of that comfort. Here is being built up a great and powerful people—a Canadian people—possessing great elasticity and vigour of mind and strength of body—capable of assimilating and appropriating to itself all that it should not reject, and having vigour, force, and energy enough, to reject all that it cannot appropriate.

You, like ourselves, will admit there is a change which takes place in the European constitution after a short or longer residence in this western portion of the globe. These changes in physique—changes that we observe as well in the animal and vegetable kingdoms—changes so marked that many of the flora are sometimes with difficulty recognized, so different are they from their European cousins —those changes in the human constitution are no less marked: the high colour which flushes the cheeks, and reddens the skin of Europeans, fades somewhat ; the skin becomes drier, less soft. The effects of the dryness of the air is visible in the dryness of the hair and nails of our bodies ; the hair becomes darker and straighter, partaking more of the aboriginal type ; the teeth are said to decay at an earlier age (but of this anon) ; the fat which cushions the muscles and gives a roundness to the general outline is less abundant, and the muscles of the face, or their tendinous prolongations, are more prominent. New habits spring up within us ; we seem to take on a new form of existence, and the national and natural character is soon modified to suit the new order of things which here exist. Our cis-Atlantic life is active, yet it is not one of such ceaseless activity as, perhaps, with you. Methinks, we occupy, in that respect, an intermediate posiition between the people of the old world and you the people of the new.

During the couple of hundred years of its existence, Canada has given no sign of physical decay. On the contrary, the children of New France—longest in possession of the soil—are greatly superior in strength and

powers of physical endurance to their French progenitors, even to the peasantry of Bretagne—still the home of the healthiest, most vigourous and most prolific, and let me add the most virtuous of the French nation; while the descendants of the English, Irish, Scotch and Germans have more than held that superiority of *physique* enjoyed by their progenitors on the other side of the Atlantic. They, too, have gained in height and lumbar strength and exhibit nowhere those evidences of deterioration which Knox and other writers gloomily foreboded.

ON INFANTILE SCURVY, WITH REPORT OF TWO CASES.*

By A. D. Blackader, M.D.

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It is only recently that the symptoms of scurvy in children have received recognition by the profession in America. Scarcely a twelvemonth ago, Dr. Northrup of New York, previous to the presentation of a paper on this subject before the New York Academy of Medicine, wrote letters to physicians in various parts of the States and elsewhere, asking their experience with infantile scurvy. Along with others I was asked to communicate what I could, either from my own personal experience, or from that of my *confrères*, in reference to the prevalence of this disease in Montreal. I had to reply that personally I had not up to that date recognized a case, and careful enquiries made from many connected with the larger of our English and French hospitals and children's institutions, received everywhere the same answer, that no cases had so far been recognized in Montreal.

This autumn, however, I had the satisfaction of seeing two fairly distinctive cases, and as the symptoms of scorbutus, unless looked for, are liable to be either unnoticed or mistaken and attributed to other causes, it seemed to me that a report of the cases, with a short review of the literature, might prove of some interest to this Society.

My first case was seen by me about the middle of last November. The infant, 12 months old, had at birth been a small but well-nourished infant, and for the first six weeks was nursed almost entirely at the breast. Then the supply failed, and the infant, under the supervision of the attending physician, was fed with a mixture of

* Read before the Montreal Medico-Chirurgical Society, Jan. 11th, 1895.

milk, barley water and lime water. Under this artificial feeding it failed to thrive; vomiting, curdy motions, and almost continuous colicky pain, attested the failure of digestion. One by one the more popular infant foods received a trial: Cardinal Food, Lactated Food, Neave's Food, Nestlé's Food, Horlich's Malted Milk, Peptogenic Milk Powder. Then the infant was taken to the country. Milk was again tried, but failing to agree, recourse was had to Carnrick's Soluble Food which appeared for the time to be digested and assimilated. The child under this commenced to gain weight, the motions improved, sleep was more restful, while during the day the infant appeared bright and contented. About the first week in October, the mother noticed that the child cried on any attempt to move the lower limbs. Shortly afterwards, a swelling was observed about the right knee, and later a bluish-colored spot appeared an inch below the head of the tibia. This was shown to the attending physician, who told the mother the child must have had a fall and prescribed a liniment to be rubbed over the swelling. Five or six days afterwards a similar bluish spot appeared on the other knee, and the mother, on again consulting the physician, was told that probably both knees had been injured by the fall, that accidents like this required time, and quietness was enjoined for the baby.

Two weeks afterwards the child was brought to my office. The notes taken at the time are as follows: Infant, twelve months old, rather small for its age, pale, but with a fair amount of subcutaneous fat. Head well shaped, anterior fontanelle not abnormally large; slight beading of the ribs; chest well shaped; abdomen slightly prominent; infant cries at once on movement of the lower limbs. On the right knee, one inch below the head of the tibia, there is a bluish-green spot of ecchymosis about the size of a half-dollar piece; just above the joint the limb appears slightly swollen, and firm and resisting to the touch. The skin is pale and cool, but the surface is apparently tender. The circumference of the limb here is $\frac{3}{8}$ inch larger than that

of the corresponding limb. Below the left knee there is another spot of ecchymosis considerably larger than on the right knee; here the limb is tender and slightly swollen. No attempt is made by the child to move the limbs, and since the onset of the trouble, four weeks ago, the infant has refused to make any attempt to stand, although previously it was eager to do so. The patellar reflexes are active. Another spot of ecchymosis, about the size of a ten-cent piece, is present on the left ear. An inspection of the mouth shows the two lower incisors cut, but the gum surrounding them is of a deep bluish-red colour, bleeding easily when touched. The upper incisors are not yet through, but the mucous membrane over them is reddened, and over the edge of the two teeth almost through, it is of a deep bluish tinge. Otherwise the child appears well. The tongue is slightly furred, the motions are somewhat pale in colour, the urine is said to be scanty, and the thermometer taken in the rectum records 99° F.

The infant was ordered to be given about a tablespoonful of fresh orange juice, slightly sweetened, and diluted with water. Artificial foods were stopped, and a mixture of creamy fresh milk with thin barley water was directed to be given. Once a day the child was to have a dessertspoonful of the red juice of a lightly broiled steak. The knees were to be kept covered with cotton wool and a light bandage.

Three days later, the mother reported that the infant appeared to be almost well. Tenderness on movement had passed away, the ecchymosis had almost disappeared, and on the second night after the change in his food, the child passed the quietest night of its life. Eight days after the first visit the child was brought again to my office. The gums were perfectly healthy; there was almost no difference to be made out in the girth of the two lower limbs, both of which it moved of its own accord. The infant was now given a mixture of cod liver oil and iron, and a little carefully mashed potato was added to

its diet. I have not seen it since, but on telephoning to the mother a few days ago, the child was reported to be the picture of health.

The second case was an infant aged 11 months, the last of a family of six children, all strong and healthy, and all of whom had, as the mother told me at the time, been brought up on the bottle and thriven on it, giving little or no trouble. This one had been perfectly well up to five weeks previous to my visit, when it was noticed to show signs of pain on movement of the legs. This, it was thought by the mother, would pass away, but on its continuance, the family physician was called in, who examined the limb carefully and found no sign of any injury. Two weeks afterwards the child was again seen, the diagnosis of rheumatism made, and a salicylate mixture prescribed. No improvement followed, the child became very restless at night, and I was asked by the attending physician to see the infant. I found the child very pale, almost earthy in colour, but with a fair amount of subcutaneous fat. On examination, there was evidence of slight rachitis. The chest was well shaped, there were no ecchymoses anywhere to be seen, and there was no distinct enlargement in any place, of either of the lower limbs. The child made no effort to move its limbs, and cried bitterly when any forcible attempt was made to disturb them. The reflexes were normal. On examination of the mouth, the gums were found in a very similar condition to that described as met with in the previous case. Around the two lower incisors there was a broad line of inflammation of deep bluish hue, bleeding easily when touched. The lungs, heart, and abdominal organs all appeared healthy. On enquiry, I found that while the other children had been fed on various mixtures of milk and flour, for this child the mother had been instructed to boil all the milk given. This she had endeavored to do thoroughly, the better to kill the germs. So the boiling continued over several minutes.

In the way of treatment I prescribed as before, a little orange juice, and the red juice of underdone steak. I also stopped the boiling of the milk. On the following afternoon I received word from the mother that there was already a marked improvement; and when I called after a few days I would hardly have recognized it for the same infant.

Only a few weeks ago, Dr. Barlow, in the Bradshawe Lecture before the Royal College of Physicians, has very exhaustively treated the whole subject of scorbutus in infancy. Dr. Gee, in 1871, first drew attention to this disease, and described five cases under the title of osteal or periosteal cachexia. Not, however, until 1878 were the symptoms of this disorder asserted to be scorbutic in character by Dr. Cheadle, and in 1883 Dr. Barlow, in a lecture before the Medico-Chirurgical Society of London, gave the first complete account of its clinical history, etiology, and the morbid conditions present in the bone lesions, and demonstrated its resemblance to scurvy in the adult. Since then numerous cases have been reported in England. In America, Dr. Northrup, at the meeting of the American Pediatric Society in 1889, was the first to report cases of infantile scorbutus, and in his paper last year before the New York Academy of Medicine, a total of 106 reported cases were recorded as having been observed in America.

The disorder generally makes its appearance in infants between the ages of nine and eighteen months. It is said to occasionally occur as early as the fourth month. The onset is usually sudden. The infant becomes fretful; disinclined to move; its lower limbs are kept drawn up and still, and any forcible movement of them gives rise to continuous crying. Later on, should the conditions giving rise to the disorder continue, an obscure swelling may perhaps be noticed on one of the lower limbs, usually on the femur towards its lower end, or on the upper end of the tibia, and a few days later, a similar swelling may appear on the corresponding limb of the opposite side. Generally

the swellings are not symmetrical. The skin over them is pale, and there is no local heat or pitting. The bulk of the limb is increased, but there is no fluctuation ; on the contrary, the swelling is ill-defined and is suggestive of thickening round the shafts of the bones. The limbs are now more or less paralysed, everted and immobile, but the patellar and plantar reflexes are active.

If the disease progress, swellings of the same character may appear on other bones ; on the scapulæ, bones of the arm, vertebræ, etc., and occasionally, in some cases, fractures on slight occasion may occur.

One of the more frequent, and sometimes the only swelling of the kind, as Dr. Barlow points out, occurs on the upper orbit, giving rise to sudden proptosis of the eye-ball, with puffiness, and in a few days, slight ecchymosis of the upper lid. These swellings are due to extravasation of blood under the periosteum. In severe cases, hæmorrhage may occur into the centre of the shaft, leading to extensive absorption of trabecular tissue, and predisposing to fracture. Extravasations are also met with in the superficial and deep set of muscles, but one never meets clinically with the small subcutaneous hæmorrhages of purpura. The condition of the gums is modified, as in the adult, by the presence or absence of teeth. If the teeth be present we have distinct sponginess of the gums, which in some cases may go on to fleshy swellings, even projecting from the mouth and giving rise to fetor. When only a few teeth are present the sponginess is less marked ; and if there be no teeth, the gums may appear normal, or may present small bluish extravasations over the sites of the advancing teeth.

The chief constitutional symptom is the anæmia, due partly to direct cachexia, and partly to loss of blood from the extravasations. Although emaciation may not be marked, asthenia appears to be extreme. Pyrexia is only slight and often altogether absent, but occasionally an elevation of 102° F. is recorded, apparently due to the pain and tension produced by the extravasation. The appetite is gen-

erally fair; the urine is scanty. In severe cases, hæmaturia may sometimes be observed.

The presence of some degree of rachitis was noted by all the earlier writers on this disease, and some of them, especially in Germany, attributed the morbid conditions noticed to an acute form of rickets. More careful observations, however, showed that, while the symptoms of both disorders might be present in an infant, they were distinct and not dependent upon one another. The all-important factor in the development of scorbutus in the infant, as in the adult, is a faulty dietary. We shall always find in scorbutic infants a history of the child having been fed for several months on food of which the vitality has been more or less killed by cooking. Infants fed on the so-called patent foods for any length of time appear especially liable to this disorder. To such foods we must also add condensed milk, milk too long sterilized, and boiled milk. As Dr. Barlow says, "The further we get from living food the more is the likelihood of scurvy being induced." Scorbutus does not appear to be a disease frequently met with among the poor, or in out-patient hospital practice, for the follow-reasons given by Dr. Barlow: (1) Such patients are generally too poor to afford the expense of feeding their infants altogether on patent foods; and (2) the children of the poor are usually brought to the table at an early age, and are given pieces from their parents' dishes, and thus obtain a variety, harmful in some respects, but beneficial in that it prevents the development of scorbutic symptoms.

It is to be noted that the symptoms of this disease vary much, and are sometimes very apt to mislead. In some cases irritability of the infant and apparent tenderness of the limb, are out of all proportion to the signs found. In a few cases proptosis due to orbital hæmorrhage has been for some days the one prominent symptom, and if we are not on guard, may give rise to a diagnosis of more serious disease. In a recent lecture Mr. Howard Marsh calls attention to several cases where scorbutic extravasations had led

to the diagnosis in one case of sarcoma, in another of fracture of the femur, and in a third of infantile paralysis, the alarming symptoms quickly subsiding on proper dietary and treatment.

There is another thought to bear in mind in reference to this disease, and it appears to me a most important one, and it is this just as we may meet in some children with symptoms of rickets so slight that they may easily escape our notice, unless a careful consideration of the history and examination of the infant be made; and just as such a rachitic condition may underlie other disorders of the respiratory or alimentary tract and require proper treatment before these disorders can be permanently and satisfactorily cured; so may we not have a scorbutic condition with such slight symptoms as to scarcely permit an absolute diagnosis, yet may not such a disordering of nutrition underlie many troublesome and persistent clinical conditions, and require careful consideration and treatment before we can satisfactorily alleviate the associated ailments?

A SERIES OF EXTRA-UTERINE PREGNANCIES.*

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I shall not attempt to enter into a consideration of the subject of this condition, for it may be found occupying chapter upon chapter in any modern text of gynæcology or abdominal surgery, and medical literature teems with it. Still I think you will agree with me that one or other of these cases possesses more than one point of interest.

This paper is more properly a series of four case reports of extra uterine gestation, which present so many differences in their history and clinical course and effect that I thought perhaps their relation might be of interest to you.

Two of these cases were advanced, one to a little over six months, the other somewhat less. The other two were early pregnancies not advanced more than three months. Again, one of each of the two was operated upon and the others recovered with equally as good results.

CASE I. I first saw at the Metropolitan Dispensary in June, 1893, and ordered her to the Western Hospital, where she was admitted on the 15th of that month. Her age was 28 years and she had been married nine years and had had nine children and no miscarriages. Her youngest child was then 18 months old. She had never, so far as she knew, suffered from any menstrual or other disorder bearing upon her condition at the time. When first seen at the dispensary she was complaining of great abdominal pain and enlargement of the abdomen, due to a tumour, she had been told by her physician.

While in the hospital she gave the following history in addition to that stated above:

On February 28, 1893, she became unwell and continued

* Read before the Montreal Medico-Chirurgical Society, January 25th, 1895.

to be so until March 29. The flow was accompanied with more or less pain, which she had not experienced before, and at no time had she noticed shreds or pieces of tissue to lead one to suppose that a decidual membrane had been shed. She continued to exercise her household duties, but experienced always more or less pain of a lancinating character and situated more in the lower abdomen, accompanied by nausea, vomiting, fainting attacks and frequency of micturition. These symptoms continued up to the time when seen and patient suspected, but was not quite sure, that she was pregnant.

The mammæ and areolæ were in a condition corresponding to the period of pregnancy that she was supposed to have been in. The abdomen was enlarged, tender, and with some slight difficulty an ovoid in contour tumour could be felt reaching to the umbilicus and enlarging below where its outline to palpation became lost in the depths of the pelvis. The tumour was dull on percussion, very tender, no contractions to be felt, no fœtal movement (although the patient thought she had felt these), and no heart sounds to be heard at the time. A well-marked souffle was heard.

Per vaginam the uterus was found to be crowded to the right and front of the pelvis, but its exact position and connection with the tumour could not be ascertained accurately. It was raised slightly and measured by the sound slightly over 70 m.m. The remainder of the pelvic cavity was filled by a large fluctuating tumour continuous with that observed above. It was thought at the time that a solid movable body could be detected, but the extreme tenderness precluded thorough manipulation. Dr. Fisk, then house surgeon of the hospital, detected fœtal heart sounds upon the day of operation.

When the cavity of the peritoneum was examined it was found that the pelvis was roofed by a tumour which had a projection upwards. It completely filled the pelvis from the brim. The uterus and right appendage were easily felt in the position partially ascertained by the examina-

tion previously mentioned. About one inch of the left tube could be felt close to the uterus, the rest of the tube appeared to be lost or spread out upon the tumour. Here and there small and recent clots of blood entangled in omentum and lying in between the folds of bowel were to be seen. These had evidently come from the sac or cyst wall, in which more posteriorly several small oozings were observed. Shreds of fibrin attaching the cyst wall to the surrounding parts were quite numerous and evidently but a few days old.

A trocar withdrew a quantity of unmeasured slightly tinged with blood fluid from the cyst. The puncture bled so freely that a finger was introduced to explore the contents and which was found to be a living child. The opening was quickly enlarged and the fœtus extracted. This was followed by the most awful hæmorrhage I have ever seen and was only controlled by aortic compression. The cord was attached about one and a half inches to the left of the median line to the roof of the cavity. The placenta was wholly attached above and the thickness of the placenta and cyst wall in parts did not measure more than one-fourth of an inch and seemed to be but peritoneum and placental tissue.

Any attempt at hæmostasis by ligature, forceipressure or cautery seemed to increase the hæmorrhage. The sac was sewn by its opening to the abdominal opening, pressure on the aorta being maintained in the meanwhile and the cavity tightly packed with iodoform gauze, as were also the united openings. This stopped any active hæmorrhage. The child after delivery made a few feeble respirations and died. No attempt was made to extract the placenta.

The patient recovered well from the effects of the anæsthetic, considering the amount of blood lost.

For several dressings in which the gauze packing was removed it was found necessary to compress the aorta, and any attempt in detaching the placenta was followed by profuse hæmorrhage.

She continued to improve for ten days, after which symptoms of thrombosis appeared in the left femoral vein, septic in nature. This was followed by pyæmic abscesses. She recovered, however, but did not leave the hospital until October 18th, and is now in fair health.

I am indebted to Drs. McConnell and Perrigo for their able assistance in this case and its after-treatment.

CASE II. This case is of much interest, for it is believed to be now a case of retained fœtus. The patient was 30 years of age and had been married for six years. There is a history of a probable miscarriage (of about three months) five months after marriage. Since this she had been attended by a gynæcologist for some uterine disorder. She had enjoyed fair health otherwise and menstruation had always been regular.

On the 12th of September, 1893, she was seen for the first time and complained of pain in the lower region of the abdomen, syncopal attacks and vomiting. There was a slight rise of temperature and pulse rate. She had menstruated during the last week of March, nearly six months previously. About the end of the following May she noticed a slight flow of blood and pieces of skin, as she called them. This was accompanied by violent cramp-like pains, vomiting and fainting. Her friends thought she was dying. She recovered from this attack, but had more or less pain in the abdomen and occasional attacks of syncope until she came under the writer's care.

She was poorly nourished, complained of nausea and vomiting. Pulse was 100 and weak, temperature 100 1-5°. Pressure over the abdomen elicited much pain, and a smooth, immovable, rounded mass was felt in the median line and to the left and in the pelvis. The breasts were hard and tender and the areolæ dark.

By bimanual examination the mass in the pelvis could be felt; it was semi-fluctuant, tender and was harder in consistency in some parts than others. The uterus was apparently to the right and front of this mass and could

not be definitely separated from it. No fœtal movement or heart sounds were detected, nor had the patient experienced any sensation of motion. No attempt to introduce a sound into the uterine cavity was made. She was kept under observation for a few days, during which time she improved.

She was admitted to the Western Hospital on September 24th, a little over six months from the date of her last menstrual period. On admission a slight amount of dark fluid blood was seen coming from the vagina; this flow ceased after six hours.

The hospital records state that fœtal heart sounds were to be heard. This, however, could hardly have been the case. She suffered from labour-like pains from time to time; these, however, passed off. During the first week of October a large amount of pus was passed from the rectum and has continued to be discharged up to the present time.

Dr. Perrigo advised operation before this occurred, but was not supported by the rest of the hospital staff in consultation. She left the hospital some two weeks later somewhat improved. She was seen at her home shortly afterwards and the condition of the pelvic contents was as follows: The uterus is pushed to the right side and front and its outline can be more easily felt; it is more movable. To the left of and behind the uterus a large mass the size of a full term fœtal head may be felt. This is harder at some parts than others and particularly so close to the uterus. Here a rounded nodule or body is situated. Towards the left of the pelvis the mass become more irregular in outline. No crepitation or grating can be elicited on palpation. Pus is discharging from the rectum, from exactly what part cannot be ascertained, but the sinus must be high up.

This patient was seen quite recently and her condition is the same. The mass is hard, more nodular and somewhat contracted. She suffers more or less pain constantly in the pelvis, The rectal discharge continues, but is less in amount. She has not menstruated since March, 1893.

This case was looked upon when first seen as one of extra-uterine gestation. Although perhaps a dermoid tumour might simulate or resemble such a condition, yet the history past and subsequent is that to be expected in the diagnosis formed.

CASE III. This and the following case are instances in which the primary rupture of the tube also caused the death of the embryo. Both were less than three months pregnant.

In one the condition immediately endangered life, in the other the symptoms were masked. Indeed the condition of affairs was not suspected before operation.

In the first of these cases, a young healthy looking woman of high complexion, 25 years of age, was sent to the hospital by Dr. Tatley, complaining of pain in the right iliac region and was supposed to be due to some chronic, probably gonorrheal, inflammation of the tube and ovary on that side.

She was admitted on May 23, 1894, with this history: She has had four children, and in September, 1893, twelve months after the birth of her youngest child, she first complained of pain on that side. This had been continuing up to the past few weeks, when it became worse.

Two days before admission she felt a sudden sharp pain in the side; this was accompanied by vomiting and she had to go to bed. There was no marked history of concealed hæmorrhage to be elicited. The pain continued for a few hours and ceased.

When first seen she was in good condition, colour and pulse normal, temperature half a degree above normal. There was slight resistance to and pain on pressure over the part complained of.

I have omitted to state that she had been regular and did not suspect that pregnancy existed. However, she is not very positive as to the occurrence of menstruation or not and I hardly like to accept her statements as correct. On examination per vaginam an enlarged ovary and tube

was thought to be present on that side and to be accompanied by adhesions.

On May 28, five days after admission, the abdomen was opened and a large amount of clotted blood was found filling the pelvic peritoneal cavity. The tube on the right side was enlarged and ruptured on its posterior aspect. The rupture was large and an ordinary pencil could be inserted through it. It was ragged and a mass of chorion, etc., protruded through it. Villi were found in abundance. The left tube presenting signs of old inflammation was removed also. Recovery was uneventful.

CASE IV. In this case the internal hæmorrhage must have been great. The patient was 34 years of age, had had five children and no miscarriages. Two years before, at the time of her accouchement, she had a severe post-partum hæmorrhage. Menstrual history negative.

She was seen for the first time on February 19, 1894, and was then about eleven weeks pregnant, as she thought. Three-quarters of an hour before, while engaged in her house-work, she felt something give way on the right side and she fainted with pain. Vomiting set in and she became so bloodless and weak that the last rites of the church were administered.

On examination she was without colour to the lips, buccal mucous membrane almost bloodless, sighing and gasping for breath. The pulse attained a rate of 150 per minute when first seen and was hardly perceptible at the wrist. Speech was hardly audible. She had frequent hiccough and complained of slight pain over right iliac region, where some fullness was to be felt on palpation and dullness on percussion. Some slight fullness was also felt here bimanually. However, but little attempt at thorough examination was made and the patient was disturbed as little as possible. Her condition improved slightly that night, but next morning she again collapsed and was even in a more serious condition than at first and felt more pain.

Dr. Perrigo saw her with me on the second day and con-

curred in the necessity for immediate operation. This was declined and she again gained strength and again had a fit of collapse on the third day. After this she slowly and surely gained and on the fourth day had slight intermittent pain, followed by a discharge of blood and decidua. There had been no flow of any kind for the preceding eleven weeks. A large mass occupied the pelvis, fixing the uterus, and it was thought that the ovary and part of the tube could be felt on the right side.

She made a tedious but complete recovery, and nothing more than an induration and slight enlargement is now to be felt about the broad ligament.

Comment.—In the first case is an example of the most dangerous form of extra-uterine pregnancy that could exist. It has been said by many a writer that the rupture of a gravid tube is one of the most dreadful calamities to which women can be subjected, and anyone who saw the loss of blood in this case will agree with the saying.

Women have been known to collapse and die so suddenly that poisoning has been suspected and the case only cleared up on autopsy.

Could this case have gone to full term, this would have been impossible; rupture was impending at the time of operation. In any case in which a diagnosis can be made, or even if the condition be suspected, the only logical and humane treatment is operative, and that as soon as possible.

If another case of like nature be encountered by the writer the sac would be opened by the cautery knife, with the hope of less hæmorrhage.

The compression of the aorta was most effectual here, and it is to be regretted that this means has not been more employed, especially in controlling post-partum hæmorrhage. It was recommended by Bishop in the *Lancet*, 1893, and for the past three years the writer has used it with invariable results.

The removal of the placenta is advised when attached

above. In this case it would have taken with it the roof of the sac.

In the second case it is to be regretted that an early operation had not been resorted to. The present condition of the sac communicating with the bowel would complicate the usual state of affairs greatly, and it is hardly to be expected that the patient in her present condition can enjoy perfect health and be free from further danger. However, the result might have been worse.

Whether this case had a primary rupture into the layers of the broad ligament or into the peritoneal cavity is mere conjecture, but the history would incline me to favour the former situation.

In the third case the history of cessation of menstruation is wanting, but this might occur in any case and would perhaps be misleading to the attending physician. Another feature of this case is the absence of the marked state of collapse usually seen in this accident.

The interesting points in Case IV. lie in the extreme collapse observed, the occurrence of further hæmorrhages with eventual recovery, and the absorption of the greater amount of clot.

A CASE OF PERFORATED GASTRIC ULCER—OPERATION—RECOVERY.

By Robt C. Kirkpatrick, M.D.,

Demonstrator of Surgery, McGill University, Surgeon to Montreal General Hospital.

As this case is one of more than usual interest, I bring the patient before you to-night to show how perfectly recovery has taken place. The history is as follows, and for it I am indebted to my house-surgeon, Dr. Byers.

Fanny R., aged 24, native of Ireland, servant girl by occupation, was admitted into the Montreal General Hospital on Nov. 17th, complaining of "pain in the abdomen and shoulders."

Patient gave the history of having been seized on Thursday morning (2 o'clock), Nov. 15th, with severe pain in the epigastrium and lower substernal regions, which caused her to suffer intensely, and along with this she vomited "dark coloured" material for several hours. The condition, except for additional pain felt in the shoulders, continued thus unabated in spite of treatment, and she entered the hospital on Saturday afternoon, Nov. 17th. Was uncertain when asked as to the condition of her bowels during this time.

In addition to the above, patient gave an indefinite history of having been under treatment two years before for shortness of breath on exertion, pallor, headache, amenorrhœa, etc.; symptoms of chlorosis, and of having had during the month previous to the onset of her major illness, pain in the region of her stomach, sometimes severe and coming on immediately after eating, and sometimes felt between the intervals of taking food. Walking, particularly up-stairs, rendered the condition worse, and the pain seemed to have grown more severe during the few days preceding the attack of Thursday, Nov. 15th. Occasionally, the patient said, she had "felt sick at her stomach," but

she never had vomiting of blood, nor did she at any time notice anything peculiar about her motions. Of late, also, her appetite had been very poor and capricious, and her strength and general health much impaired.

When seen first after admission, patient was lying in bed in the dorsal position, with her legs drawn up, moaning, and in great distress.

Her face was pallid, and lips dry. She complained of pain in the abdomen, particularly in the epigastric region and in the shoulders, especially the left. The tongue was brownish, fissured and dry in the centre, whitish and moist at the edges. Sordes present on the teeth.

She complained somewhat of being thirsty, but was not sick at her stomach, and had no inclination to vomit.

The abdomen was prominent and rounded, and evenly distended.

Tenderness general, but particularly marked in the epigastric and innermost portion of the right hypochondriac regions. Tenseness of the abdominal walls was not great, and not more marked in any special region. No evidences of tumour in any situation. Percussion revealed a general tympanitic note, which mounted up and completely obscured the liver dulness. The urine was high-coloured, with thick cloudy deposit, spec. grav, 1.032; reaction acid; albumen present in appreciable quantities; casts and leucocytes found on microscopical examination. Respiratory and vascular systems normal; temp., 101.5; pulse, 120; respiration, 44.

As the patient did not improve during the night, it was decided, after consultation with Dr. Armstrong, that the condition was one of perforated ulcer of the stomach and that the only hope was immediate operation. Accordingly the operation began at 2 o'clock in the afternoon; the details are as follows:

An incision was made from the ensiform cartilage to within a short distance of the umbilicus. On opening the peritoneum a small quantity of gas escaped and the anterior

wall of the stomach presented. This was found to be attached to the parietes by slight adhesions, which were easily broken down by the fingers.

On disturbing the viscera thus, more gas escaped from the abdominal cavity, and while assisting me to break down the adhesions, Dr. Armstrong's finger slipped into the hole in the stomach. Gauze pads were immediately packed around the opening in order to prevent escape of the stomach contents, and then Dr. Armstrong withdrew his finger. The stomach was drawn up through the wound and examined. The ulcer was situated in the anterior wall of the stomach, a little to the right of the œsophageal line, and more toward the superior than inferior gastric border. The opening was a little larger than a five cent. piece, and was closed with a continuous Czerney-Lembert suture after trimming the ragged edges with a pair of scissors. The Lembert suture was continued for about half an inch toward the median line, in order to invert a portion of stomach wall that looked as if ulceration might be going on inside. The abdomen was then sponged out, a rubber tube inserted into the right flank and the edges of the incision brought together by through and through stitches of silkworm gut. Irrigation of abdomen was not used.

During the operation the patient's pulse became very weak, but on being put back to bed she came quickly out of ether, with little pain or vomiting. The pulse improved quickly, stimulation being required on only one occasion when strych. gr. $\frac{1}{50}$ was given. Exudation was very slight only ℥1 ss. clear fluid coming away, so that the drainage tube was removed on the following morning, after 20 hours. All food by mouth was prohibited at first, patient's strength being maintained by nutrient enemata of beef tea and peptonized milk. On the third day small quantities of milk were given by the mouth. The patient was dressed on Nov. 23rd and again on Dec. 3rd, when the stitches were removed. The wound healed by first intention. Slight suppuration occurred in the upper part of the incision, and a small sinus appeared five weeks after the operation.

This appeared to be due to the working forward of a bit of deep gastric suture, which could be felt as a rough body at the bottom of the sinus. The patient sat up, out of bed, on Dec. 19th, and since then her general health has been improving steadily. The temperature was normal on the thirteenth day following the operation. The sinus has now healed and the patient is perfectly well.

The operation has been performed a number of times, but so far very few successful cases have been reported. At the meeting of the British Medical Association last summer (*British Medical Journal*, October 20, 1895), the subject came up for discussion, and at that time only five successful cases had been reported. The operators were Taylor, Kriege, Morse, Maclaren and Gilford. M. P. Michaux, of Paris *(Bulletin Med., Oct. 24, 1894)* reports a successful case and mentions another, that of Roux, of Lausanne. Lastly R. H. Bourchier Nicholson reports a case *(Brit. Med Journal, Nov* 3 *and Dec. 22, 1894)*. This makes a total of nine cases reported up to date,

WOUND OF THE STOMACH WITH A JACK-KNIFE.

By D. W. Ross, M.D., Florenceville, N.B.

Mrs. S. is a married woman, 41 years of age, and the mother of seven children, The youngest child is only seven months old. She is a thin, but strong, hardworking woman. Her husband had recently been an inmate of an insane asylum.

On Tuesday evening, November 6, 1894, he sat by the cylinder stove and sharpened his jack-knife upon it. This knife he had used as a tobacco knife and for all other general purposes for which a farmer uses a knife. His wife went into the next room and stooped over a trunk to get something. As she went in her husband followed her, and when she was stooping he stabbed her in the abdomen with the knife.

After he pushed the knife in he gave it a rip up. The woman spoke to him and asked him what he did it for. She then left the house and walked, with her baby in her arms, one-eighth of a mile to the nearest neighbour's house. Here she lay till medical attendance arrived. The next evening I arrived, and upon examination found some viscus protruded and wounded, with dark-looking thick fluid pouring out of the wound.

At that time, twenty-four hours after being wounded, she showed no signs of shock or collapse. Pulse 91; temperature 102°. Although there did not appear to be much hope I decided to do what I could to give her a chance for her life. Her supposed ante-mortem statement had already been taken, and I was told by the magistrate that there was only one chance in a thousand to save her life. After making the necessary preparations I commenced to cleanse the viscus. This was no easy task, for the woman had no doubt lived a long time without taking a bath.

I decided that the viscus was the stomach on the following grounds:

1. The contents were potatoes, onions and bread—the remains, evidently, of an undigested meal—sweet and no fæcal odor.

2. At the underneath part of the viscus was a part of the pancreas.

3. At the lower convex border was a large artery.

4. The thickness of the muscular coat as seen in the wound.

5. After removing the contents the shape was charac teristic.

6. There were no longitudinal bands. The viscus was not thrown into folds.

7. There were no glandulæ epiploicæ.

8. There was no fæcal odor.

9. The size of the organ was too large to be the small intestine.

The stomach had evidently been wounded with the point of the knife, for on the peritoneal surface the wound was half to three-quarters of an inch in length, while the mucous membrane was only cut to the extent of about one-quarter to one-third of an inch.

Through the gastric wound the contents were removed with a probe. The stomach walls were found to be thick, infiltrated, œdematous, and even brittle.

The wound in the stomach was cleansed and closed with twelve Lembert catgut sutures, turning in about one-half inch of the stomach round and bringing the peritoneal surfaces together.

The stomach was so congested that blood came out along the sutures before they were tied. This was the most difficult part of the operation.

At the lower end of the wound the needle pierced an artery and it was quite difficult to control the bleeding. To do this I passed a small needle and catgut on each side of the spouting point, but when I tried to tie them to close

the artery the blood poured out along these sutures. It seemed as if I had pierced a vein. Artery forceps were then tried, but would not control it, because the tissues seemed to give and tear easily. Hot water and pressure stopped it. This was the last stitch put in. They were tied easily till I came to this same suture, when on tieing it the bleeding started again. Hot water and pressure stopped it, but took some minutes, and considerable blood was lost. Of course, after all, the loss was nothing, but it looked large. The stomach and skin on which it rested were then cleansed with a weak carbolic solution. The stomach could not be returned through the original wound. With a scalpel and a grooved director lying on my finger I enlarged the wound till the stomach dropped into the abdomen. There appeared to be considerable bloody effusion in the peritoneal cavity, but I did not think it necessary to wash it out.

The wound in the abdominal parietes was now seen to be about four inches long. The original wound could be easily made out. It was about one and three-quarter inches long and had been made about one inch to the left of the umbilicus. The lower end of the wound was nearly four inches below the umbilicus. How the stomach and contents exuded through such a small wound is somewhat of a mystery to me; its position, too, so low in the abdomen. It did not appear to be drawn up; it lay right there at the bottom of the abdominal wound with the sutures to the front. When I saw the position of the external wound I expected the stomach to be drawn up. It was in sight when the wound was closed, and by palpation I am satisfied it remained there for days. The wound in the abdomen was then cleansed and closed with six silk sutures passing through the skin and peritoneum. No drainage tube used.

The only anæsthetic used was a hypodermic injection of morphia, gr. $\frac{1}{4}$, and atropine, gr. $\frac{1}{100}$. During most of the suturing she slept. Handling the stomach did not appear

to cause any uneasiness and she did not appear to have much feeling there. It did not cause vomiting; she only vomited a little when first stabbed. This was noted before she went under the influence of the morphine. She woke up before the operation was concluded, but did not appear to suffer much; she complained most when the abdomen was being sutured.

The operation was commenced at 10.30 p.m., twenty-five hours after she had been stabbed; it was finished at 1 o'clock. During the operation her pulse was 120, after dressing the wound it was 100 and temperature 101°. At 4 o'clock a.m. her pulse was 96 and temperature 100°. She was now ordered to eat nothing except one teaspoonful of hot water every two hours and put on small quantities of opium.

The subsequent history of the case is as follows: November 9, temp. 102°, pulse 91. Allowed one teaspoonful of chicken broth every three hours.

November 11, pulse 100, temp. 101°, tongue dry. There was no tenderness or evidence of general peritonitis. There was a marked gangrenous odour about the room and the breath of the patient. Carbolic acid had to be sprinkled freely to cover it. She was allowed to-day two tablespoonsful of chicken broth and a rectal injection of iij. of peptonized milk. To allay thirst a rectal injection of hot water was ordered and proved efficacious. The stomach could easily be felt enlarged still; wound was doing well, no suppuration; iodoform dusted on and dressed.

November 13, temp. 100⅖°, pulse 108; no gangrenous odour, no evidence of general peritonitis. Wound examined and found suppurating and edges separated where the jack-knife had made the cut. One stitch was taken out and a large quantity of pus was pressed out of the left side. It seemed to come out of the hole left by the removed suture, and not from the wound. There seemed to be a pocket of pus to the left of the wound. Tr. benzoin

co. poured into the wound and dressed again. More liquid food and drink allowed.

November 14, pulse 102, temp. 100 1-5°; less pus.

November 16, pulse 100, temp. 100°; less pus. All the stitches removed. Patient calling out to be taken home; ordered not to sit up.

November 18, pulse 96, temp. 99½°; very little pus. The part of the wound made by the surgeon had now healed by first intention, the rest healing by granulation. The woman now begs to go home, declares she will go; I forbade her sitting up. While I was getting my horse out she dressed herself, and before I was two miles away she walked about one-eighth of a mile to her own house. No one would help her or haul her, for they would not take the responsibility. On her way, as she passed a water pail, she satisfied her desire for cold water. She drank a large quantity, in fact as much as she wanted. She acknowledged afterwards that it must have been as much as a quart and that it hurt her after she got home. Her home was a roughly boarded, unfinished house, with three rooms, bitterly cold. Here she was in the month of November, just out of bed, with seven children. Sanitary conditions were the very worst possible. The reason, of course, she wished to get home was so she could do as she liked. At her neighbour's house they carried out the physician's directions and took the best of care of her. She wanted to get where she could eat and drink what she chose.

November 21, pulse 84, temp. 99°; sitting up holding her baby; wound healthy. Vegetables and meats forbidden.

November 25, pulse 84, temp. 99 4-5°; symptoms of a severe cold; wound doing well.

November 30. pneumonia. Wound clean. No pus. Appropriate treatment for lung complication ordered.

December 6, nearly recovered; wound doing well. Granulations touched with blue stone.

December 6, about recovered and wound considered

healed. After the 10th day she never lay down except at night and had just what she chose to eat and drink. She is now as well as anyone.

December 13, travelled 26 miles to give evidence at the trial of her husband. She felt real well and appeared in a normal condition. This is the last time I have seen her.

This case shows either great individual capacity for recovery, or else it is not so dangerous to open the healthy abdomen as has been thought.

It also teaches me that it is very difficult to decide definitely whether an injured person will survive or not, and to do my duty even if an operation under great difficulties is indicated.

A sin of omission may be as bad as one of commission

Retrospect Department.

RETROSPECT OF PHARMACOLOGY AND THERAPEUTICS.

By A. D. Blackader, M.D.

Professor of Pharmacology and Therapeutics and Lecturer on Diseases of Children, McGill University.

On the Therapeutic Value of Hydrastinine Hydrochlorate.—(University Medical Magazine, June, 1894.) By H. C. Wood, M.D.—Among the more recent additions to the United States Pharmacopœia is a salt of the artificial alkaloid, first produced by Martin Freund, by oxidation of hydrastine. It is a yellow, crystalline, somewhat deliquescent powder, with comparatively slight taste and very soluble in water. It seems to have a wide physiological and therapeutic range. Its properties have not yet been fully investigated, but it bids fair to become an important addition to our medicinal agents. It appears to have a depressing action on the spinal cord. It contracts the blood vessels apparently by direct action upon their muscular coats. It has also a stimulating action upon the heart, and may prove a valuable remedy in cases of heart weakness.

Its influence as a calmative depressant of the brain and spinal cord, conjoined with its stimulant action upon the heart and arterioles should render hydrastinine a valuable remedy in cases of general feebleness and lack of circulatory power occurring in women and men. When to these powers is added the influence it possesses over the uterus, its probable importance grows. In all forms of menorrhagia, whether due to simple atony, to fibroids, or even to more severe organic diseases, hydrastinine has a very distinct therapeutic action. In Dr. Wood's experience it is distinctly more powerful than ergot; the arrest of hæmorrhage is so prompt that it can hardly be due to vascular contraction alone, and there seems no reason to doubt that

the alkaloid is a powerful ecbolic. (I would desire here to urge a careful trial of this drug in suitable cases. In several cases in my own practice it has given me very excellent results.—A. D. B.)

On the Therapeutic Value of Salicylate of Strontium.—(*British Medical Journal*, January 5, 1895, and *International Medical Magazine*, February, 1895.) By H. C. Wood, M.D.—The writer calls attention to this drug as a valuable addition to every-day therapeutics. He says that after using the lactate, iodide and bromide of strontium freely, he came to the conclusion that the strontium element materially modifies the action of the haloid salts on the alimentary canal. This suggested the possibility that strontium might modify the action of salicylic acid. From experiments upon dogs he determined that in therapeutic doses it elevates the arterial pressure, and in large doses is less depressing than either the sodium, or even the ammonium salt. He has since then used it freely in practice, and finds that in doses of five grains it is one of the best intestinal antiseptics; in doses of ten or fifteen grains it acts very decidedly as a salicylate in gouty and chronic rheumatic conditions, without producing disturbance of the stomach. It appears to be less active in acute cases than is the ammonium salicylate, but in chronic gouty conditions with lithæmia it appears to be the most valuable drug that we have.

A New Method of Treatment of Pulmonary Phthisis—(The *Medical Magazine*, July, 1894, and the *Medical Chronicle*, November, 1894.)—Dr. Carasso, of Genoa, describes a treatment of phthisis by continuous inhalation of oil of peppermint. He claims that it is absorbed into the system, exerting a powerful antiseptic action on the whole organism and is eliminated again through the lungs.

His method of treatment is as follows: 1, The almost continuous inhalation of oil of pepperment; 2, the administration of creosote by the mouth in as large doses as may be permissible; 3, systematic overfeeding, milk in large quantities, up to one or two litres of fresh or sterilized

milk daily. Meat and generous wines are also advised. All possible hygienic conditions are to be observed. Under this treatment the bacilli disappear from the sputum, the cough and expectoration become less frequent, the night sweats less frequent, and the nutrition rapidly improves.

The Use of Medullary Glyceride in Conditions Attended by Paucity of the Red Corpuscles and Hæmoglobin.—(New York Medical Journal, January 12, 1895.) By A. McLane Hamilton, M.D.—The results of the use of bone marrow by Frazer and others have induced the writer to experiment with this agent during the past few months, and he has been impressed with its efficacy in certain conditions dependent upon a depraved condition of the blood. The cases selected for treatment with bone marrow presented varying forms of red corpuscle poverty, with diminution of hæmoglobin, most of which were obstinate and had resisted arsenic, iron and other hæmiants. In every case a careful determination was made before, during and after treatment, of both the red corpuscles and the amount of hæmoglobin. In two or three cases poikilocytosis was present. Under the treatment a great and rapid prolification of the red corpuscles was noted, in some cases the normal number being greatly exceeded. He thinks it reasonable to ascribe this rapid and extraordinary increase to the direct influence of the medullary extract. The immediate improvement in the state of the blood, and the subsidence of the symptoms are no less wonderful than the improvement which follows the use of thyroidal extract in myxœdema, though the gain is more permanent than in the latter. He made use of two forms of marrow, that obtained from the long bones, which was given raw, and that from the short ribs, which was given as a glyceride. He thinks his best results were obtained from the marrow contained in the ribs of a young animal. The coarse marrow from the long bones contains a great deal of [illegible]ich, while beneficial in itself, does not contain [illegible] virtues to the same extent as the finer medi[illegible]ance. The glyceride was administered

alone, and as a rule the good effects were apparent within a few days. In only one case did it fail.

A Study of Erysipelas and Its Curative Influence upon Granulating Surfaces and upon Sarcomatous Growths.—(New York Medical Journal, December 29, 1894.) By Julius Selva, M.D.—In this paper the writer gives the results of accidental and artificial inoculations with the streptococci of erysipelas in cases occurring in the Boston City Hospital. His conclusions are as follows: 1, The general infectious nature of erysipelas and its dangers should always be borne in mind; marked prostration, cerebral symptoms and septicæmia are not infrequent complications; 2, accidental erysipelas has a curative influence upon granulating surfaces, but its use in the treatment of ulcers would be unjustifiable; 3, in the treatment of neoplasms by inoculation with the streptococci of erysipelas we have a therapeutic agent which should not be used indiscriminately; 4, further investigation with the toxines of erysipelas are necessary for the resolution of this important problem.

Treatment of Inoperable Tumours with the Toxines of Erysipelas and the Bacillus Prodigiosus.—(American Journal of the Medical Sciences, July, 1894.) By William B. Coley, M.D.—The writer in this interesting paper states that he was early convinced of the danger attending an attack of erysipelas from inoculation, and of the fact that a certain portion, if not all, of the improvement was due to the toxic products of the streptococcus, rather than to the germ itself. Hence in all these later cases he has used toxines rather than the living bacteria. He has found also that the toxines of the bacillus prodigiosus greatly enhance the curative action of those of the streptococci erysipelas. He says in view of the results which he has obtained from the toxines of erysipelas and prodigiosus, which can be used with perfect safety and scientific accuracy, he considered it inadvisable to expose a patient to the risk attending an attack of erysipelas. He formulates his conclusions as follows: 1, The curative action of erysipelas upon malignant

tumours is an established fact; 2, this action is much more powerful in cases of sarcoma than of carcinoma; 3, this action is due to the toxines of the erysipelas streptococcus, which may be isolated and used with safety: 4, this action is much increased by the addition of the toxines of bacillus prodigiosus; 5, the toxines, to be of value, should come from virulent cultures and be freshly prepared.

On the Value of a Solution of Antipyrin as a Hæmostatic.—(*Medical News*, December 15, 1894.) By Roswell Park, M.D.—The writer says that during the winter of 1885 his attention was called to the efficiency of a solution of antipyrin as a hæmostatic. Carefully tested, he found that it also had distinct antiseptic properties, comparing favorably in this respect with most of the anilin derivatives in use. Experimenting with animals, he found that it could be used as an antiseptic styptic anywhere, upon the bowel, brain surface, or anywhere else, causing no symptoms that made him regret its use. He now keeps always on hand a standard sterilized five per cent. solution using it as a spray, a compress, or an injection. While it has not sufficient power to contract vessels that spurt, it almost instantly blanches and checks oozing from any surface from which blood is escaping just fast enough to be an annoyance. Moreover, it is practically unirritating. He says that he has never known harm to occur from its entrance into any part of the body, where it was not called for. He also recommends the use of the same solution in certain cases of inflammatory occlusion of the nose. To relieve temporary smarting and irritation, a weak solution of cocain may either be used a few minutes before the antipyrin, or the two may be combined. In certain acute catarrhal conditions of the upper air passages and throat, there is nothing which appears to him to give early relief more satisfactorily.

Chloralose in the Treatment of Night Sweats.—In an editorial in the *New York Medical Journal*, December 8, 1894, the writer calls attention to an article by J. Sacaze (*Nouveau Montpellier Médical*, October 6), claiming for

chloralose distinct value in the treatment of the night sweats, as well as in the sleeplessness of chronic pulmonary disease. In a few cases improvement in this respect continued after a few doses only of the remedy, had been taken, but, as a rule, on its disuse the night sweats returned. In a few exceptional cases instead of inducing sleep it produced excitement and disturbing dreams. In a number of cases of other chronic pulmonary diseases, accompanied by night perspirations, the remedy also proved effectual. The writer says that we do not yet know whether the drug acts by direct action on the sweat glands or through the medium of the nervous centres. He suggests, however, the possibility that in pulmonary cases it may act by some modification of the phenomena of infection taking place within the lungs.

Diabetes Treated with Extract and by Graft of Sheep's Pancreas.—British Medical Journal, December 8, 1894. By P. Watson Williams, M.D.—While the question of the treatment of pancreatic diabetes by means of the pancreas or extracts is a matter of special interest, and more especially while the possibility of treating pancreatic diabetes by means of grafts of pancreas is likely to receive some attention in the future, the writer desires to place on record the results obtained by him in the British Royal Infirmary. His first case, a boy of 15 years, was in good health up to three weeks before admission. At that time he was weak, rapidly wasting, passing an average daily amount of urine amounting to seventy-seven ounces, containing three thousand grains of sugar and two and a half per cent. urea. After altering his diet he was given first freshly minced pancreas for some days, afterwards a freshly prepared extract of pancreas, and afterwards an extract hypodermically, with practically no alteration in the symptoms. Codeine and morphine were also given, but soon lost their slight control on the amount of sugar excreted. After five months of such treatment, portions of a pancreas taken from a freshly slaughtered sheep, under strictly aseptic precautions, were grafted into the sub-

cutaneous tissue of the breast and abdomen, the whole operation being completed within twenty minutes of the death of the sheep. Although the incisions appeared to be quiet healthy, coma set in notwithstanding the free use of alkalies, and the lad died on the third day after the operation. At the necropsy the patient's pancreas was found small, shrivelled, and appeared to be little else than fibrous tissue. In a second case, which appears to have been of a comparatively mild type, fresh pancreatic extract, both hypodermically and by the mouth, produced no amelioration whatever.

On the Diuretic Value of Calomel and the Unusual Tolerance of it in a Case of Cardiac and Renal Disease.—(The *Medical News*, December 5, 1894.) By William Pepper, M.D.—In this paper the writer points out the value of the diuretic action of calomel under certain conditions of heart failure. In a severe case, of which he details the particulars, with grave cardiac disease, embolism of kidneys and spleen, and a general septic condition, the improvements were at times simply marvellous. The most striking feature in this treatment was the influence of the calomel This drug was used repeatedly with marked benefit. Under its influence there was invariably a great increase in the quantity of the urine secreted, and, in consequence of this, relief of dropsy and of the general symptoms. The effect was obtained only when the dose of calomel was a large one, and it never lasted more than a week or ten days. Small doses failed entirely ; the greatest daily excretion of urine, one hundred and forty fluid ounces, occurred under the influence of three grain doses administered every six hours. It was equally evident that the drug was most active when dropsy was marked, and when the bowels were kept in check. Owing partly to the quantity of morphine administered, the calomel did not appear to have any purgative tendency, but from the comparative ease with which the patient was purged with other remedies, this explanation is not entirely sufficient. The rapid loss of the diuretic power after several days'

action was well marked, and has been so frequently observed by others, that it seems an established fact. After a few days' interval the calomel acts as effectively as before. The dose should be not less than one grain every three hours, and during its use the bowels should be controlled by opium, and the constant use of antiseptic mouth washes should never be neglected

On the Use of Antipyrin in Large Doses.—(British Medical Journal, December 1, 1894.) By T. McCall Anderson, M.D.—The writer advocates the use of very large doses of antipyrin in certain neurotic cases. He says that personally he has had hardly any experience of its deleterious effects, at least of a serious nature, when employed with due precautions. He details the case of a boy, aged nine years, who had suffered for the previous two and a half years from severe fits of a hystero-epileptic character, sometimes as many as thirty or forty attacks occurring in a day. The treatment consisted of rest in bed, regulation of the bowels, and the exhibition of antipyrin in gradually increasing doses, commencing with five grains thrice daily. In three weeks he was taking twenty-five grains three times a day, with complete cessation of the attacks. The dose was then slightly lowered. The lad was dismissed from the hospital in two months as quite well, and it was reported later that there had been no recurrence of the attacks. In another case, a lad of thirteen years, suffering from choreic movements of the right side, received, under gradually increasing doses, as much as fifty grains thrice daily. He left the hospital in six weeks quite well. In another very violent case improvement was very rapid under similar treatment. Dr. Anderson sums up his experience in the following aphorisms: 1, Antipyrin is not the dangerous drug which some observers have led us to suppose; 2, it may be given with safety in large doses, but the initial dose must be small and must be slowly and cautiously increased under careful supervision; 3, in large doses it often yields surprisingly good results, and in chorea it is the only medicine from which cures may confidently be expected.

Reviews and Notices of Books.

Notes on the Newer Remedies, their Therapeutic Applications and Modes of Administration. By DAVID CERNA, M.D., Ph.D., etc. Second edition. Enlarged and revised; pp. 250. W. B. Saunders, Philadelphia. 1893.

The rapid progress of pharmacology makes it almost impossible for the ordinary, or even the special practitioner, to keep himself thoroughly *au courant* with the newer remedies which chemists and pharmacists place at his disposal. The author in preparing these notes has endeavoured briefly, but succinctly, to place before his readers a brief description of the chemistry, pharmaceutical and physiological properties, and the therapeutics of all the newer remedies whose usefulness has been more or less ascertained by clinical investigation. The success of his efforts is attested by the appearance of this second edition. The work has been thoroughly revised, many of its articles rewritten, and all the more recent physiological and therapeutic knowledge concerning the newer drugs has been incorporated in this edition. We can recommend the work for its accuracy, and the useful character of the information it contains. A.D.B.

Transactions of the American Dermatological Association at its Eighteenth Annual Meeting held at Washington, D.C., May 29th, 30th, 31st and June 1st, 1894, in connection with the Congress of American Physicians and Surgeons. Official report of the proceedings by Charles Warrenne Allen, M.D., Secretary. New York: Press of Geo. L. Goodman & Co. 1894.

The following are the contents:

Thyroid Feeding in Diseases of the Skin. By Dr. George Thomas Jackson.

The Rare Forms of Alopecia. By Dr. G. H. Fox.

A Case of Favus of the Head and Body. By Drs. J. Abbott Cantrell and Emanuel Stout.

Adeno-Carcinoma of the Skin originating in the Coil Gland. By Dr. J. A. Fordyce.

The Question of Contagiousness of Molluscum Contagiosum. By Dr. Henry W. Stelwagon.

Ichthyosis Congenito (so-called Harlequin Fœtus). History of a Case still living. By Dr. Samuel Sherwell.

Angioma Serpiginosum and some other Dermatoses. By Dr. J. C. White.

The Protozoa-like Bodies of Herpes-Zoster. A Contribution to the Study of Psorospermosis. By Dr. M. B. Hartzell.

Cold as an Etiological Factor in Diseases of the Skin (with a Report of Cases.) By Dr. William Thomas Corlett.

Acquired Idiosyncrasy for Quinine, showing peculiar Cutaneous Manifestations. By Dr. Charles W. Allen.

A Case of Symmetrical Cutaneous Atrophy of the Extremities. By Dr. Edward B. Bronson.

The Relation of Impetigo Herpetiformis to Pemphigus Vegetans. Dr. Zeisler.

Report of the Statistical Committee.

Transactions of the College of Physicians of Philadelphia. Third Series. Volume the Sixteenth. Philadelphia. 1894.

The following papers are contained in this volume:

Discussion on the advisability of the registration of Tuberculosis.

Hydrophobia in the United States in the Last Five Years; with Suggestions as to Treatment. By Chas. W. Dulles, M.D.

Round-celled Sarcoma of the Anterior Mediastinum; Extensive Metastases, including the Brain, both Choroid Coats, Oculomoter and Optic Nerves, and External Ocular Muscles. By Arthur V. Meigs, M.D., and G. E. de Schweinitz, M.D.

Successful Simultaneous Triple Amputation. By Henry R. Wharton, M.D.

A Further Communication on the Results of a Bacteriological Examination of the Pipettes and Collyria Taken from a Treatment Case used in Ophthalmic Practice, with the Effects of Inoculations. By G. E. de Schweinitz M.D., and E. A. de Schweinitz, Ph.D.

Hysterectomy for Other Conditions than Fibroid and Malignant Tumors. By Charles B. Penrose, M.D.

Speech Without a Larynx. By Harrison Allen, M.D.

Excision of the Entire Right Clavicle for Tumour. By John Ashhurst, Jr., M.D.

Vitiligo Involving the Whole Surface of the Body. By Henry R. Stelwagon, M.D.

Cæsarean Section and Symphysiotomy for the Relative Indications. With report of cases. By Edward P. Davis, M.D.

Further Remarks on the Occurrence of a Form of Non-albuminous Nephritis other than Typical Fibroid Kidney. By D. D. Stewart, M.D.

Leprosy.

Acute Appendicitis. By John B. Deaver, M.D.

On the Reactions of Nucleo-albumin (Erroneously Styled Mucin) with the Commonly Employed Urinary Albumin Tests; the Difficulty of Distinguishing these Reactions from those of Serum-albumin, Globulin, etc.; Remarks as to the Occurrence of a Normal Constant Albumin-trace in the Urine. By D. D. Stewart, M.D.

A New Hæmatokrit and a New Technique. By Judson Daland, M.D.

Note in Regard to Fractures of the Humerus at the Elbow-joint. By Charles W. Dulles, M.D.

Chronic Valvular Disease of the Heart; a Study from Clinical Observations of 1024 Cases. By Thomas G. Ashton, M.D.

Treatment of Typhoid Fever. By Charles W. Dulles, M.D.

Further Observations upon the Etiology, Diagnosis and Treatment of Acute and Chronic Appendicitis; with the Report of Sixty-one Chronic Cases Operated Upon, with One Death. By John B. Deaver, M.D.

The Work of the Gynæcological Clinic of the Hospital of the University of Pennsylvania, 1893-1894. By Charles B. Penrose, M.D.

Note on Strontium Salicylate. By H. C. Wood, M.D.

A Pompeian Catheter. By Judson Daland, M.D.

Remarks on Fac-similes of Nineteen Peruvian Skulls Illustrating Ancient Trephining. By Charles W. Dulles, M.D.

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The Diagnosis and Treatment of "Floating Kidney." By Dr. R. Harvey Reed, M.D., (University of Pennsylvania) Columbus, Ohio. Reprint from Columbus Medical Journal, April, 1894.

Notes on Movable Kidney and Nephrorrhaphy. By George M. Edebohls, A.M., M.D. Read before the New York Obstetrical Society, December 4th, 1894.

Three Cases of Uterus Bicornis Septus; with Report of Operations performed upon them. By George M. Edebohls, A.M., M.D. Reprinted partly from the New York Journal of Gynæcology and Obstetrics, April, 1893; and partly from the Transactions of the New York Obstetrical Society, Jan. 16, 1894.

The Technique of Vaginal Hysterectomy. By Geo. M. Edebohls, A.M., M.D. From the American Journal of the Medical Sciences, January, 1895.

A New Method for Anchoring the Kidney. By R. Harvey Reed, M.D., Columbus, Ohio. Reprinted from the Journal of the American Medical Association, December 22, 1894.

Explanation and Demonstration of the Infiltration (Schleich) Method of Anæsthesia—Preliminary Paper with Ten Illustrations. By H. V. Würdemann, M.D., Milwaukee, Wis. Reprinted from the Journal of the American Medical Association, Dec. 29, 1894.

Canadian Medical Literature.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL.]

PERIODICALS—DECEMBER, 1894.

DOMINION MEDICAL MONTHLY.

A week's work in Gynæcology—Kenneth N. Fenwick, Kingston, p. 193.

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A travers les hôpitaux de Paris—Jules Jehin Prume, Montreal, p. 617.

THE CANADIAN PRACTITIONER.

(1.) A case of cysticercus cellulosæ of brain—J. M. Forster, Kingston, p. 879.

(2.) Should antiseptic vaginal douching be made a routine practice during the puerperium?—A. H. Wright, Toronto, p. 883.

(3.) History of two cases of secondary hæmorrhage and one of delayed hæmorrhage following tonsillotomy—Price Brown, Toronto, p. 890.

(4.) Sprains and their appropriate treatment—A. Primrose, Toronto, p. 894.

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(5.) Pachymeningitis hæmorrhagica interna—J. T. Fotheringham, Toronto, p. 101.

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The affinity of gout and rheumatism—R. Shawe Tyrrell, Toronto, p. 151.

Strangulated mesenteric hernia—J. Baugh, Hamilton, p. 153.

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Cocaine poisoning—J. B. Mattison, New York, p. 49.

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(6.) Puerperal phenomena of influenza—Adam H. Wright, Toronto, p. 133.

Action of the hydrochlorate of scopolamine on the eye—Thomas R. Pooley, New York, p. 135.

Severe brain injury, with recovery—A. N. Hotson, Innerkip, Ont., p. 138.

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De l'angine diphtéritique toxique—Jules Jehin Prume, Montreal. p. 5.

Le traitement des maladies des trompes de Fallope et des ovaires—A. Lapthorn Smith, Montreal, p. 9.

A propos d'antitoxine—Charles Verge, Quebec, p. 16.

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(7.) Laminectomy for fracture-dislocation in the cervical region—F. Winnett, Toronto, p. 1.

Pathology of gallstones, H. Hill, Toronto, p. 8.

(8.) Some histological changes in the liver in typhoid fever—J. A. Amyot, Toronto, p. 12.

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Action of antitoxine in diphtheria, p. 186.

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Notes of four consecutive cases of intubation of the larynx in diphtheria—Alfred J. Horsey, Ottawa, p. 191.

(9.) THE CANADIAN MEDICAL REVIEW.

Recent electro-therapeusis of goitre, with improvements in apparatus—C. R. Dickson, Toronto, p. 1.

Treatment of Colles' fracture—Wm. Britton, Toronto, p. 5.

A case of infantile spinal paralysis, W. W. Britton, Toronto. p. 8.

A peculiar fracture of the clavicle—J. J. Cassidy, Toronto, p. 10.

CANADA MEDICAL RECORD.

Some obstetrical notes—A. L. Smith, Montreal, p. 73.

(1.) The patient in whom this very rare condition was found was a woman, aged 37, a Canadian of German parents. She had been at the time of her death an inmate of the Hamilton Asylum for over eleven years, and with a history of a previous attack of insanity. She was inclined to be irritable at times, but worked regularly in the sewing-room; bodily health fair. Nothing of interest occurred until March, 1893, when she began to complain of headache and looked poorly, for which no especial cause could be detected. Headache continued unrelieved by treatment. On November 10th she had an epileptoid attack, from which she soon recovered, but on the 13th she had another convulsion, in which she died. At the autopsy, in the arachnoid, and lying in the sulci of the brain, there were found four small cystic tumours about the size of hazel-nuts—at the posterior portion of the right parietal lobe, on the right frontal near the Sylvian fissure, on the

left parietal lobe and at the outer anterior corner of the left frontal lobe. The cysts were not adherent, but were easily rolled out, leaving a depression in the brain substance. No other cysts were discovered in the liver or other viscera. Upon microscopic examination the cysts were seen to be cysticerci cellulosæ.

(2.) The question should antiseptic vaginal douching be made a routine practice in the puerperium, in order to assist in avoiding the dangers of puerperal infection, is very ably discussed in this paper. The author from his long experience holds a very decided opinion in the negative, thinking that the practice is both useless and dangerous, for the following reasons:

1. Douching disturbs that perfect rest and quiet, (not in a surgical sense, but in a general way,) which is so delicious to a weary and more or less exhausted woman.

2. Douching is unscientific on surgical grounds. The wounds of the cervix and vagina are, as a rule, kept close by the elastic and even pressure of the surrounding tissues. The introduction of suppositories and douching seriously interfere with physiological rest and pressure and materially delay the healing of those wounds. The recumbent posture, with the slight changes required in voiding urine and fæces, is well adapted for drainage.

3. Douching does not lessen the dangers accruing from the presence of bacteria in the vagina. It is generally agreed that in normal cases the vaginal mucus is strongly acid, the acidity being produced by innoxious organisms, which have their habitat in the healthy vagina and which have some restraining, if not destructive, effect on the pathogenic cocci. Vaginal antiseptic injections may interfere with this acidity and thus chemically lessen the resistance of the tissues to bacteria.

4. Douching is actually dangerous by disturbing clots and opening avenues for infection.

Though many of these arguments are theoretical, the weight of evidence goes to show that the hospitals in which

the routine douching is not practiced have the better results. In considering the statistics of modern hospitals, it is necessary to keep in mind the fact that the injections are administered with care and skill, while in private practice they are frequently given in a careless and slovenly way, notwithstanding the conscientious efforts on the part of the accoucheur to guard against such faulty work, and are thus dangerous in the highest degree.

(3.) Case I. A young man aged 22 had hypertrophy of both tonsils. They were removed at one sitting by Mathieu's tonsillotome. Five days later, while stooping over and lifting a heavy weight, blood flowed freely from both tonsils, but which was checked by rest and applications of tincture of iron.

Case II. Boy, aged six. Tonsils removed by Mathieu's smaller instrument. Hæmorrhage only moderate. Four and a half days later hæmorrhage had commenced during sleep; it was arterial but not severe, and was controlled by a strong solution of tannic acid.

Case III. A man. Right tonsil removed by the tonsillotome, and left by the galvano-cautery. The right tonsil bled moderately, the left not at all. Two hours later there was free oozing, checked by applications of pure tincture of iron.

The author has been able to find, including the three here reported, but sixty-four recorded cases of hæmorrhage after tonsillotomy; of these, three were children, aged respectively six, eight and ten years. In two of them hæmorrhage did not occur until four and four and a half days after operation. In the third it commenced early and did not cease for five days. Sixty-one cases were adults and, with three or four exceptions, the hæmorrhage occurred within two days after operation.

(4.) In the treatment of sprains the results to be obtained are (1) early absorption of effused material, and (2) the prevention of adhesions. The most valuable form of treatment is pressure properly applied, after examining the

joint and determining, as nearly as possible, the extent of the injury. If it is the ankle, the foot is placed at a right angle (or if possible less than a right angle) with the leg. Cotton wool (ordinary cotton batting is the best) is applied entirely over the foot from the toes upwards to the middle of the leg. The amount of wool must be considerable, so that it is one inch thick under the bandage. The bandage must be put on as firmly as possible and be applied from extremities up. There is no danger of making too much pressure if there is sufficient wool. Such a bandage gives almost immediate relief by supporting the vessels, so restoring normal circulation, and eventually tends to the re-absorption of effused material. It also keeps the part at rest. At the end of a few days, a week at the longest, the bandage must be removed and passive motion carefully conducted in all the normal directions, then reapply the bandage. At the end of ten days or a fortnight the wool may be dispensed with and a flannel roller will be sufficient. In the majority of cases of severe sprains the individual may be able to use the injured joint for ordinary purposes after the lapse of three weeks.

(4.) This case, a heavy drinker, aged 59, had fallen in the street, and there was a transient crossed paralysis, without nausea or convulsions, affecting sensation and motion of left side of face, and of right arm. When seen the legs had recovered, if affected at all; they were normal in sensation and motion. The tongue was protruded slightly to left side, and the disturbance of speech was not aphasic, but motorial, the tongue and lips being slightly paralyzed. Temperature about 98° F.; pulse about 80 and regular. Arteries (radial) stiffened, but not calcareous, and tension not apparently very high. A diagnosis was made of hæmorrhage low down in the pons, so as to be below the decussation, but high enough to include the facial fibres on their way out. The man died of respiratory failure on the eleventh day. At the autopsy, on exposing the brain, there was seen over both parietal regions a well-

marked false membrane, simulating the arachnoid, but showing at its line of junction with the dura well-marked sacculation, and separated from it by effusion and bloody clot, so that it seemed at first as if the dura were about one-eighth inch thick in places, and full of tawny brown serum and clot. There was a thin clot about one-eighth inch thick, on each side in frontal region, and these thinned off to mere reddish inflammatory infiltration. The rest of the brain apparently normal. No evidence of arterial disease.

(6.) In an attack of influenza during pregnancy, the patient runs the ordinary risks as to complications, and the dangers of such complications, especially pulmonary, are greater than in the non-pregnant state. The danger of abortion exists, especially if there are complications such as high temperature.

In labour influenza adds materially to the dangers of the patient, but rarely causes death. In certain cases with complications or great weakness, the dangers are of the gravest sort. In the puerperal state the effects are neither serious nor lasting, but during lactation they are more serious than at any other period. The debilitating effects of the disease, and the drain produced by the nursing baby, sometimes leads to profound depression, both physical and mental.

(7.) The author reports a successful case of laminectomy. The supra-spinous ligament between the fourth and fifth vertebra was found ruptured, the spine of the fourth bent to the left, and the lamina of the fourth on the left side fractured. At the operation the lamina of the fourth on the right side was divided, and the spine and lamina were drawn forcibly away. The lamina of the fifth was also removed. Nineteen weeks after, report says bladder normal, uses left hand freely, right not improved.

(8.) Very little mention is made in text-books of the changes in the liver in typhoid fever, though some effect must be produced by lesions so gross as are found. The author's conclusions are drawn from seven cases. In all the

specimens, little nodules were found, in some in small numbers, in others in comparatively great numbers. The nodules vary from one-fortieth to one-fifteenth of the size of the lobules, and are distributed in no regular fashion, most frequently found in the middle zone. The nodules may be divided into two classes, the lymphoid and the necrotic; neither of them seem to be of new growth. There is no sign of expansile pressure on the surrounding tissue, All the nodules seem to be at first alike, but they become invaded afterwards to a greater or lesser extent by lymphoid cells. The nodules are made up of masses of unstained granular protoplasm the size of, or much smaller than, hepatic cells. In some of these masses the nuclei are still visible, though unstained; some are stained, but the cell protoplasm even then is nearly invisible. Some of the nuclei are broken up into several fragments, chiefly round, which stain diffusely. The capillaries of the nodules are filled with granular material. Lymphoid cells are found in the capillaries chiefly, some few between the hepatic cells. The so-called lymphoid nodules differ from this only in the difficulty with which the former cell elements are seen, and account for the great number of lymphoid cells present. The nodules are sharply cut off from the surrounding tissue. In some of the nodules the lymphoid cells are very few in number, in others there are so many present that one would almost take them for hypertrophied, previously existing lymphoid masses, such as normally exist in the liver. Besides these nodules there are present areas of capillary dilatation with only the nuclei remaining in the hepatic cells. These areas are of varying size and location, but are generally larger than the nodules before described; generally roundish, but not so sharply marked off from the surrounding tissue as the necrotic nodules. It is not a nutmeg change. There is no pigmentation. The other changes in these specimens are nutmeg change, atrophy, and pigmentation of hepatic cells and dilatation of the capillaries in the intra-lobular-vein zone. Fatty degeneration of the cells in the portal-vein zone is present

in two of the specimens. Beyond granulation there is no change in the protoplasm of the cell.

(9.) With January a new medical journal is added to the list of Canadian medical literature—*The Canadian Medical Review.* This venture seems to be the outcome of some difference of opinion among the members of the editorial staff of an already established periodical. The arrangement and composition, it is a pleasure to see, is almost entirely of original matter, with but few clippings from other journals. The reports of the Toronto societies are of considerable interest as showing the work that is being done in that city. The editors in their introduction state that they will endeavour to make the *Review* a first class medical journal, and judging from the first number it will, no doubt, soon take the lead of the many periodicals emanating from the medical press of Toronto.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Tubercular Ulceration of the Stomach—Dr. Adami.
Multiple Intestinal Anastomosis of Tuberculous Origin—Dr. Adami.
Tuberculosis of One Suprarenal—Dr. Adami.
Generalised Tuberculosis with Affection of Back of Tongue, Soft Palate, Pharnyx and First Two Inches of Œsophagus—Dr. Adami.
Two Complicated Breech Cases of Labour—Dr. G. A. Brown.
Death from Chloroform—Dr. James Bell.
Dislocation of the Ninth Dorsal Vertebra Treated by Extension—Dr. Armstrong.
Arthrectomy—Dr. Armstrong.
Scurvy in Children with Notes of Two Cases—Dr. Blackader.

Stated Meeting, December 28th, 1894.

G. P. GIRDWOOD, M.D., PRESIDENT, IN THE CHAIR.

Dr. A. G. Morphy was elected an ordinary member.

Tubercular Ulceration of the Stomach.

Dr. ADAMI exhibited this specimen taken from a child of ten, born in Montreal, who, until within three months of her admission to the Royal Victoria Hospital, was in one of the charitable homes in the city.

At the beginning of October she began to be depressed and suffered from a violent attack of abdominal pain with frequent vomiting after meals. The attack passed off, to recur again a fortnight later ; there was a third attack the next week, and since then there have been several others. A fortnight before admission, the seizures became very frequent and violent, two or three daily. The vomiting did not recur after the first attack.

During the last two months the emaciation had been most rapid, until upon admission on December 7th, the little patient was little more than skin and bone. The abdomen was full and slightly distended and painless upon entrance into hospital, later there was diffuse tenderness

upon palpation. The bowels were regular, but slightly loose.

A diagnosis was made of tubercular peritonitis. It was worthy of note that the family history in this case was good. The father had died of a "tumour in the neck," the mother and three children were alive and healthy. While in hospital the child stated that a cow at the house had become sick some few months before, and at last ceased to give milk.

The child became weaker and yet more emaciated, and died upon the 22nd instant.

At the autopsy, the body presented the most extreme emaciation, with a petechial eruption upon the lowe part of the thorax and upper half of the abdomen, and upon examination presented advanced tuberculosis. Upon opening the abdomen there were abundant signs of dry tubercular peritonitis. The omentum was adherent in several places to the walls. Scattered through it were several small hæmorrhagic spots, and occasional large tubercles. In the centre of the hæmorrhagic spots miliary tubercles could frequently be detected. The coils of the small intestines were dotted over with similar petechiæ. In the serous coat of the stomach also were at least four whitish tubercular masses. In the small intestines were typical transverse tubercular ulcers which had broken down, exposing irregularly the muscular coat. The mesenteric glands were enlarged and caseous, as were also the retroperitoneal glands.

Before passing to the consideration of the state of the stomach, Dr. Adami concluded describing the general post-mortem appearance.

Dissecting out the thoracic duct, a tubercular mass was found in its walls opposite to the body of the sixth dorsal vertebra.

The bronchial glands were found enlarged and some of them entirely caseous. There were small cavities, the largest the size of a brown bean, in the upper lobes of both

lungs, with tubercular broncho-pneumonia, and further a condition of fairly recent dry tubercular pleurisy, the membranous adhesions being not pale and bloodless, but of a reddish colour, and removable with moderate ease. Tubercles were present in both visceral and parietal pleuræ.

There was then a condition of advanced and very generalized tuberculosis which from the extremely caseous state of the mesenteric glands, he was inclined to regard as having first manifested itself in connection with the alimentary tract, although it would certainly be possible to urge that the disease began in the lungs. It was easier to explain intestinal tuberculosis succeeding pulmonary than *vice versa*. It must, however, be remembered that in this case the earliest symptoms were abdominal.

The petechial eruption and hæmorrhagic condition of the omentum and the serosa of the small intestines gained an explanation by the discovery of growths of the pyococcus aureus in cultures, made from the spleen and other organs. There had been secondary infection on the day immediately preceding death.

Turning to the stomach, this was found fairly full of curdled, milky matter, and upon examination of the walls there was found, as shown by the specimen, a certain amount of post mortem digestion, so that in one place the wall was almost eroded through. In addition, in the centre of the great curvature was an ulcer 13 mm. in diameter, with raised and irregularly thickened edges, and with a comparatively smooth base, formed of the muscular coat of the viscus. The smoothness of the base might have caused doubt as to the tubercular nature of the ulcer, but that this was truly tubercular was shown by the fact that corresponding to it in position upon the serous coat was an area of confluent tubercles.

Tuberculosis of the inner coats of the stomach was a rare condition. Why this should be when the affection was so common in the intestines it was difficult to explain, unless it was that the acid excretion of the cells of the mucosa

hindered the proliferation of the tubercle bacilli, just as acids are known to hinder the growth of the microbes outside the body. This theory would help to explain the rarity of tuberculosis within the brain substance and in muscle-tissues which also are characterized by their active development of acid substances. That there was no great lack of production of acid on the part of the gastric mucosa, as a whole, in this case was evidenced by the post mortem digestion.

Multiple Intestinal Anastomosis of Tubercular Origin.

The same case exhibited no less than four fistulous communications between different portions of the gut. The uppermost of these was in the lower part of the jejunum where the opening passed between the floors of two ulcers at points distant, the one four inches lower down the gut than the other; the lowest was between the lower end of the ileum and the first inch of the ascending colon. The fistulæ had occurred at regions where the serous surfaces of ulcerated areas had come into apposition, and where the extension of the inflammatory process on to the serosa had apparently resulted in the formation of adhesions anterior to perforation.

Tuberculosis of One Suprarenal

Dr. ADAMI exhibited this case of chronic tuberculosis affecting the left suprarenal, the right being normal. The affected organ presented a mass 2.5 c.m., or roughly an inch in diameter, showing on microscopical examination a central very chronic and fibroid tubercular growth with areas of caseation and frequent giant cells.

The specimen was from a case from Dr. Stewart's wards at the Royal Victoria Hospital of mixed syphilis and tuberculosis in an elderly woman, the latter manifesting itself also in the lungs, where evidently it was of old standing, and in the pleura where it was of relatively recent advance.

Within the last eighteen months there had been a short discussion at one of the meetings of this Society concerning Addison's disease, associated with affection of one

suprarenal. In the present case, as is most usual, unilateral disease of the organ was associated with no bronzing of the skin, vomiting, and progressive loss of mental and bodily vigour.

Generalised Tuberculosis with Affections of Back of Tongue, Soft Palate Pharynx, and first two inches of Œsophagus.

The last specimens were from a case of extremely widespread tuberculosis in a man of 22 years of age, who died in Dr. Stewart's ward of the Royal Victoria Hospital. The larynx, trachæa, pleuræ, pericardium, large and small intestines, peritoneum, liver and kidneys, all showed signs of the disease, and with this was extensive ulceration of characteristically tubercular nature in the above more unusual positions

Two Complicated Breech Cases of Labour.

Dr. G. A. BROWN read a paper on this subject, which will appear next month.

Dr. J. C. CAMERON, speaking in regard to the treatment, said the proper course to persue in these cases depends (1) upon where the arrest has taken place—whether it is at the brim, or whether it is low down ; (2) whether the liquor amnii is present, whether it has only a short time escaped, or whether it has been long drained away. When the arrest is high up (at or above the brim) which is a common occurrence, and the hand can be introduced the manual breaking up of the wedge is indicated. He did not, however, think it necessary to pass the hand up as far as the fundus for this purpose ; by passing the fingers along the posterior surface of the thighs, the flexure of the knees could be raeched, then abduct the limb, pressing at the same time on the thigh, and the leg will generally fall into the operator's hand. This treatment, known as Pinard's manœuvre, is also indicated when sufficient liquor amnii is present to permit the introduction of the hand. When, however, the breech has descended, or when the liquor amnii has all drained away leaving the uterus contracted round the fœtus it may be impossible to introduce the

hand sufficiently to make such manipulations ; the forceps are then indicated. The fillet and hook are apt to do too much injury to warrant their use. Tarnier's Axis Traction Forceps are the best for such cases, the blades being introduced so as to grasp exactly the lateral diameter of the breech. If care is taken as to the direction in which traction is made, Dr. Cameron thought slipping not so likely to occur. It is the position of the arms after all that constitute the real difficulty in such cases. If they happen to be flexed outside the legs, or if the elbows project, delivery is almost impossible.

Dr. GEO. BROWN, in reply to Dr. Cameron, thought it made very little difference once one succeeded in getting the hand inside the uterus, which method was adopted, provided the operator delivered a leg, the difficulty being in getting the hand in. He had very little faith in the use of forceps in such cases ; he found that no matter how accurately applied, or how well fitted, slipping occurred on the least force being used. It was only to be expected, as the blades could not, from the nature of the case, get a secure hold of the breech. Moreover, if Tarnier's forceps were used, and a lot of traction exercised, fracture of the child's ilia would almost certainly result.

Stated Meeting, January 11th, 1895.

J. B. MCCONNELL, M.D, FIRST VICE-PRESIDENT, IN THE CHAIR.

Dr. R. A. Bowie, of Brockville, was elected an ordinary member.

Death from Chloroform.

Dr. JAMES BELL reported this case, which will appear next month.

Dr. JAMES STEWART remarked that the cause of death was heart failure. This, he believed, was the usual cause, according to the investigations made in this country and in Great Britain. Surgeon Laurie had made various attempts to prove that death was due to respiratory paralysis; but

since his paper on this subject in connection with the Hyderabad Commission appeared, many others have closely investigated the subject, and almost all agree that death takes place, not through the respiratory, but through the cardiac centre. The matter is of special importance, as Laurie's teaching is now so widespread that the administrator is led to pay greater attention to the respirations, to the neglect of the pulse; whereas in reality it is the latter which should be the more closely watched as the source of danger.

Dr. GORDON CAMPBELL thought that in the case under discussion there must have been some recovery of the heart, temporarily at all events. Dr. Bell said that after the stoppage of the heart the lungs continued acting for six or eight respirations, then they also ceased and the patient became very livid. However, after artificial respiration and other restorative measures had been adopted, the patient again began breathing naturally, and after a certain number of full respirations the lividity became diminished and the appearance of the patient so far improved as to lead Dr. Bell to believe all was well. This improvement could not occur from the mere æration of the blood in the lungs. To relieve the congestion of the peripheral circulation the heart must have acted also, and on this account Dr. Campbell believed that here at least the initial paralysis of the heart was not final or permanent.

Dr. MCCONNELL remarked that according to a report of some investigations recently undertaken in the United States by Hare and Thornton the Hyderabad theory was confirmed, and death did seem to occur through respiratory failure.

Dr. BLACKADER said that the present opinion of investigators with regard to the action of chloroform in animals, especially dogs, was that its first toxic effect was not upon the heart, but upon the respiratory and vasomotor systems. He thought this view must be now generally adopted. Its action upon man however, seemed occasionally to differ

from this. From the clinical reports of several fatal cases it seemed to have been shown that chloroform clearly in certain cases had a primary toxic action upon the heart in man. He thought these contradictory results might be reconciled by the fact that the former dealt with lower animals in a healthy condition, whereas the latter had to do with the human species, and often where pathological conditions existed.

Dr. JAMES BELL said that in accepting the results of these experimenters we must not lose sight of the fact that although the usual mode of death from a narcotic drug such as chloroform, ether or opium may be, and very likely is, through the respiratory centres in cases such as he had now reported, the death is not the result of the narcotic qualities of the drug, but is something which occurs once in about three thousand times, or perhaps only once in fifty thousand times. The experiments alluded to have never gone beyond a couple of hundred cases, and therefore were not likely to meet with this special result of chloroform. He believed it very likely that where death was produced by narcotic action of the drug it occurred through the respiratory centres, and he had no doubt at all that accidents often arose from an overdose of chloroform given by a careless administrator. He had seen instances of such accidents himself where, though they did not end fatally, they might have done so. The point is, however, that once in a certain number of cases where you least expect it, in minor operations, or even before the operation has begun, where only a little of the drug has been given and where every possible precaution has been taken, cardiac failure supervenes and is not recovered from, whereas in other cases it is recovered from. He reported a case last summer of a boy whose pulse stopped and gave him a great scare, but who fully recovered. In the present case Dr. Bell thought the fact that so little bleeding followed his preliminary scratching of the scalp, a region where bleeding should be profuse, was of considerable significance. This took place four minutes before the heart

stopped, and might go to show that even then there was some inhibitory process at work in the circulation at its distal extremity which travelled towards the centre. This was to him a new thought, as he had not been accustomed to think of the arrest of the heart's action being brought about in that way, from the periphery towards the centre; still he was confident the scratches he made in the scalp did not bleed as they should have done, and their not doing so he believed of some significance.

Dr. ELDER recalled the objection made by Dr. Campbell. He could not believe that the mere æration of the blood in the lungs could so affect the lividity of the general surface as to lead Dr. Bell to think everything was coming right.

Dr. LAFLEUR asked if rhythmic traction on the tongue, after the method used by Laborde and in great favour with the Parisians, had been tried.

Dr. JAS. BELL, in answer to Dr. Elder, re-read the portion of his written report bearing on this point. He further said, the apparent recovery was never so complete as to give them any hope of resuming the operation; the cardiac impulse never returned. Dr. Lafleur he answered in the negative.

Dr. MILLS believed that though Dr. Campbell's point had been well taken, it might be pressed too far. Very few people properly estimated the importance of the respirations on the venous circulation; thus, to dilate the lungs was to enlarge the arterioles, and to allow blood to get out of the right heart, and some to take its place, so that it is not impossible to understand how a certain amount of lividity might disappear were the heart beating ever so faintly. He thought the investigations heretofore had been conducted on far too narrow a basis, and the conclusions drawn from altogether insufficient data. He thought the experiments of Gaskell and Shore proved that the heart may not only fail, but fail early. With reference to Dr. Bell's suggestion of some failure of the peripheral circulation first, it is possible to understand some derange-

ment of the vaso-motor centres by which great dilatatio of the vessels of one region may take place, while the heart still beats, causing a corresponding anæmia in other parts. The vessels of the abdominal area, for instance, may be so dilated as to suck up all the blood of the body, and there would then be practically no circulation elsewhere. Other points which he thought Dr. Bell might have laid more emphasis upon, were: (1) the fact that the surgeon is dealing with individuals diseased, or at least not perfectly normal as to health, whereas the experimenters dealt with animals generally in good health; (2) the influence of psychic impressions of dread, which existing in the mind and kept under control during perfect consciousness, may be revived in their full force as the individual sinks under the influence of the drug. Something akin to this is seen in hypnotism, where impressions made in one state of consciousness were revived and acted upon in another; (3) there was the special peculiarities of the heart muscle itself to consider. This was seen in the fact that we may act with chloroform upon hearts completely severed from their nervous connections, and get results as diverse and inexplicable as when we act upon the heart *in situ*.

Dr. BLACKADER remarked so far as pharmacologists were concerned, he believed he was justified in stating their opinion to be that the experiments of Gaskell and Shore were altogether too complicated to be relied upon.

Dr. ADAMI agreed with Dr. Blackader that the work and experiments of Gaskell were very complicated. Nevertheless in some cases where the experiment came off successfully, the results were striking, as instanced in the case of the cross-ligatures and anastomosis performed between two dogs, so that the blood of one dog exclusively supplied the cerebral vessels of the other, while his own cerebral vessels received their supply from the other. They then chloroformed one of them, and as a result of the cross anastomosing, the dog who received the chloroform had his brain supplied with pure blood, while the dog who did not

inhale it, had his cerebral blood supply charged with the drug. In some of these experiments it was found that the animal inhaling the drug, although his nerve centres were supplied with pure blood, died of heart failure, that showing that chloroform had a direct action upon the heart itself. Some experiments of his own were in the same line. He found that when certain quantities of chloroform were given, sudden and great dilatation of the chambers of the heart followed ; this occurred so rapidly as to seem as though we had here an action upon the muscle fibres themselves, or upon the fine nerve endings (which Berkley and others have now shown to be more common than supposed hitherto) rather than upon the nerve centres in the brain or cord. Dr. Adami thought the conclusion to be drawn from the observations of Gaskell and Shore was that chloroform could act directly upon the heart.

Dr. WILKINS believed the untoward action of chloroform in cases like that under discussion was in the heart muscle itself, and gave his reasons as follows. Some years ago, when performing experiments upon animals, he frequently had stoppage of the heart occur among dogs, which he was able to resuscitate afterwards by artificial respiration. This resuscitation proved the action to have been upon the heart itself ; because, the cardiac and respiratory centres being close to each other in the medulla, if the lesion was central, recovery could not take place in such a short space of time. Most of the members would remember those drowning experiments, where dogs were submerged, some with corks in their trachæ, some without ; the former were capable of being resuscitated, as they could properly aërate their blood and the heart resumed its action, the latter were not. In collapse from chloroform, if artificial respiration were kept up for three or four minutes, the heart might resume its action, showing the collapse to have been the result of the action of the drug upon the heart muscle itself rather than upon the cardiac or respiratory centres.

Dislocation of the Ninth Dorsal Vertebra Treated by Extension.

Dr. ARMSTRONG showed a man in whom he had successfully reduced a dislocation of the dorsal vertebra. The patient was brought into the hospital with what appeared to be a fracture and dislocation of the eighth or ninth dorsal vertebra. The accident occurred in the following way: The man driving under a gate-way on top of a load got himself jammed between the latter and the arch. There was no evidence of destruction of the cord at that time, he could move his legs, etc., and sensation seemed normal; but his body was doubled up, bent much forwards, and he was unable to straighten himself. A depression was observed at the point of injury and the supra-spinous ligament seemed broken. He put the patient under an anæsthetic, had a large pillow placed under his abdomen, and with the assistance of two men attempted extension and reduction. To his great surprise the dislocation was reduced almost at once, slipping right in, the two vertebræ came together and the depression and deformity disappeared. The man felt quite relieved upon coming out of the chloroform, and although seven weeks had passed he had had no bad symptoms since. From this experience he would therefore advise surgeons always to try extension of the spine with manipulation of the vertebræ before proceeding to operate, no matter what their previous experience of such cases may have been.

Arthrectomy.

Dr. ARMSTRONG showed a man upon whom he had performed arthrectomy about a year before. The patient had been exhibited shortly after the operation, when only slight motion in the joint was present; now, however, it was capable of a great deal more. The operation consisted of opening the knee-joint and removing the articular surfaces of both condyles and a portion of the tibia. He had cut across the patella, which was united by ligamentous union. The case was one of caries sicca, with marked atrophy of the muscles. The object in bringing him again was to

show how much improvement had taken place since the operation. The man had been working on a cattle ship all summer, and enjoyed apparently a very useful limb.

Dr. MILLS mentioned a case which he had seen in Baltimore a short time ago, under the care of Dr. A. W. Clement. It was dislocation in the horse of the middle cervical vertebræ, the deviation from a straight line being so great that the neck had the shape of a bent arm, and yet there never had been a symptom referable to the nervous system.

Dr. ADAMI reminded the Society that to a Montreal physician, the late Dr. Campbell, belongs the honour of what was believed to be the first case of successful reduction of dislocation of the cervical vertebræ. Dr. Campbell, while making his rounds, observed a child to fall from a tree, noticed the characteristic attitude of the body on the ground, pulled upon the head and brought the parts back into original position immediately.

Dr. JAS. BELL said he believed Dr. Campbell's case to be true. He himself saw a case of undoubted dislocation of the cervical vertebræ, without any symptoms of pressure on the cord. On first seeing him the patient refused to take an anæsthetic. On the following day, while undergoing an examination, in turning his head from side to side, suddenly his neck shot back, and he was as well as ever. It apparently reduced itself during the slight manipulation. Dr. Bell always felt there was danger of doing serious injury to the cord in attempting to reduce a dislocation ; it was hard to imagine how one in the dorsal region could be reduced without injuring the cord.

Scurvy in Children with Notes on Two Cases.

Dr. A. D. BLACKADER read a paper on this subject. (See page 653.)

Dr. MCCONNELL, after reading the articles referred to by Dr. Blackader, remembered about two years ago having had a case, which at the time he diagnosed as rheumatism, but which he now believed to have been scurvy.

Dr. KENNETH CAMERON thought he could add another

case to Dr. Blackader's series. The one referred to, which occurred last summer, was a child six months old, fed entirely upon sterilized milk and Nestlé's food. It developed subcutaneous abscesses all over the body. No teeth were present ; and the gums were not at all inflamed. Still there was some stiffness and pain in the joints, causing flexure of the limbs, and this together with the eruption on the skin was all on which he had to form a diagnosis. As at that time he was making investigations in connection with the bacillus pyocyaneus, he suspected the patient's condition to be of that nature. Bacteriological examination, however, proved negative. He decided to treat it as scurvy and prescribed orange juice and fresh milk, The result was marvellous. Inside of a week the abscesses had healed up and no others formed, the child gave evidence of returning health in every way, and is now perfectly well. The effect of treatment seemed to confirm the belief that the case was one of scurvy.

Dr. MORROW saw a case about six months ago which he diagnosed and treated as scurvy. It suffered from sore mouth, plaintive cry, and the swollen gums protruded into the mouth ; there were one or two reddish spots on the body, and restlessness was particularly marked. He prescribed orange juice and beef juice, and in one week the child was apparently well. The parents, it seemed, had been accustomed to dilute the milk very much. It had never had anything but milk and a little porridge although nineteen months old.

Dr. ORR had seen a case that day which he suspected to be scurvy. The gums were much swollen and bled readily. He examined the child for ecchymoses, but without success, although it appeared very sore all over. He was using antiscorbutic treatment, and would await the result with interest. These facts in connection with scurvy in children so lately brought to light, added, in Dr. Orr's opinion, another to the already formidable difficulties of infant feeding. He would like to ask Dr. Blackadder whether the use of

sterilized milk was to be discouraged altogether, and whether we ought to advise parents to add some vegetable substance and meat juice to the diet as a prophylactic.

Dr. BLACKADER said, in reference to the use of patent infant foods, that one was obliged to confess that in some instances it seemed necessary to have recourse to them. They might be used as a bridge to carry us over a difficulty, but their prolonged use had always appeared to him objectionable. The one important advantage which they possessed is that their process of manufacture might be supposed to render them sterile, and during the summer months, and often during the winter months, it might be almost impossible in some families to command an absolutely sterile food in any other way. In the light shown by the occasional appearance of scurvy in infants fed entirely on them he thought we must regard all foods which had been prepared at a temperature of about 212° F. as dead foods—foods which fail to afford a perfect nutrition to the infant.

THE

Montreal Medical Journal.

VOL. XXIII. MARCH, 1895. No. 9.

THE ANTOXIN TREATMENT OF DIPHTHERIA.

Evidence is steadily accumulating of the value of the antoxin treatment of diphtheria. A prolonged and very lively discussion recently took place in the Royal Medical Society of Vienna on this subject. Widerhofer and others contributed some valuable statistics which certainly seem to show that there is an undoubtedly favorable influence exerted by this mode of treatment. From the pathological side of the question, evidence of very special importance was brought forward by Prof. Kolisko. He has had unusual opportunities of becoming acquainted with the pathological changes brought about by the diphtheria poison. Since the introduction of the antoxic serum into practice in Vienna, he has performed 75 post-mortem examinations on patients in whom this treatment was carried out. He is convinced that it exerts a decidedly favourably influence over the course of the disease. The membrane is easier removed and is often found in a partially dissolved state. In the trachea and bronchi this breaking up of the membrane was found to be a very constant occurrence, an event very rarely met with in diphtheria treated by other methods. He explains this on the supposition that the antitoxic serum paralyzes the toxin action of the bacillus and prevents it from throwing out successive fibrinous layers. It causes a serous exudation, which dissolves and loosens the fibrinous material already thrown out. Kolisko

holds, however, that this action is only seen to any marked degree in the croupal stage of the disease. When the fibrinous exudation takes place, not only on the surface, but also into the substance of the mucous membrane, not infrequently the latter becomes eroded, even gangrenous. Here we are apt to meet with those fatal secondary effects, septicæmia, pneumonia, hæmorrhage, &c.

The secondary results are not infrequently the direct results of a mixed inflection. Here the antoxic treatment is of much less value.

As far as he is able to judge from the experience of the 75 post-mortem examinations made, he does not believe that there is any difference in the changes met with in the heart or kidneys as the result of the serum, as contrasted with other methods of treatment. The same changes have been met under both methods.

The evidence here sketched is certainly very strong as to the efficiency of the antitoxic serum, coming as it does from a thoroughly trustworthy, very able and experienced observer.

From some quarters reports of an injurious influence on the kidneys by antitoxic serum have been published. Kolisko, however, clearly shows that even large doses of this agent have no such deleterious action.

THE PREVALENCE OF PNEUMONIA.

Pneumonia at the present time is unusually prevalent in many districts of the North American Continent. It is especially frequent and fatal in the City of New York. During the week ending January the 26th, out of a total of 993 deaths, no fewer than 199 were due to pneumonia.

The increase of pneumonia in recent, as compared with former, years is strikingly brought out by the figures published by Dr. John T. Nagle, the Registrar of Vital Statistics.

In the year 1830, when there were 5,498 deaths in New York, only 228, or 1 in 22.8 were due to this disease, while

in 1893, when the deaths amounted to 44,486, 6,487 or 1 in 6.86 were due to pneumonia.

The great increase is, for the most part, confined to the last four years, corresponding to the recurring epidemics of influenza. There can hardly be any question that the increased prevalence of pneumonia is due to the influenza poison. The pneumonia met with in influenza is generally of a lobular and disseminated character. It may be a direct infection from the influenza bacillus or a mixed infection (pneumo-coccus, influenza bacillus, streptococcus, &c.)

It is always a very grave disease, the mortality being greater than in the ordinary croupous pneumonia.

No progress has been made with the serum treatment in croupus pneumonia. There is no proof that the serum of persons recently ill with pneumonia has any influence over the disease in another person. The alleged beneficial results obtained by the Klemperer Brothers have, unfortunately, not been sustained.

Conan Doyle, who has acquired some reputation as a story teller, deals in a recent tiny volume with the subject of hypnotism. One would naturally think that his medical knowledge would have saved him from writing nonsense, when dealing with such a subject. It unfortunately has not. A work of fiction should not be fictitious in every respect. From its perusal one should gather some grains of truth and goodness. The volume in question is an out and out fiction.

Obituary.

E. D. WORTHINGTON, M.D.

It is with deep regret that we chronicle the death of E. D. Worthington, M.A., M.D, F.R.C.S., of Sherbrooke. Dr. Worthington was one of the oldest practitioners in this Province, having been in actual practice for upwards of fifty years. For many years he was not only a leading surgeon in his own district of country, but also throughout the entire province.

Dr. Worthington was born in Ballinakill, Queen's County, Ireland, December 1st, 1820. After his arrival in this country he studied medicine with that distinguished surgeon, the late James Douglas, M.D., of Quebec, to whom he was indentured for five years. At the close of his indentureship he was appointed assistant surgeon to H. M. 56th Regiment, then quartered at Quebec, and in 1843 he was promoted to the rank of Staff Assistant Surgeon. He afterwards served with a detachment of H. M. 68th Light Infantry. Upon resigning his commission he went to Edinburgh where he attended lectures at the University and the Royal College of Surgeons, winning the Gold Medal. After a brilliant examination he, in the same year, obtained the degree of Doctor of Medicine from the University of St. Andrew's. Shortly afterwards he became a licentiate of the Faculty of Physicians and Surgeons of Glasgow. Upon his return to Canada he received the Provincial License of the Montreal Medical Board and, almost immediately, commenced the active practice of his profession in Sherbrooke. In 1855 the University of Bishop's College, Lennoxville, conferred upon him "Honoris Causa" the degree of M.A., and in 1868 the University of McGill College granted him the degree "Ad Eundem" of C.M., M.D. For some years he was one of the Governors of the College of Physicians and Surgeons of Lower Canada. He

always took a deep interest in military affairs, and in 1861 was named Surgeon of the 53rd Battalion, afterwards promoted to the rank of Surgeon-Major, which rank he retained upon his retirement. When the St. Francis Medical Association was first formed he was elected its first president, and to his zeal, to a great extent, was due the organization of the Canada Medical Association. He is said to have been the first surgeon in Canada who performed a capital operation under ether as an anæsthetic and was also among the first to use chloroform.

As the physician and friend of the poor, the late Dr. Worthington was pre-eminently distinguished. This marked trait in his character brought about him a large circle of warm friends. So much admired was the self-sacrificing devotion with which he gave his time and abilities to the needs of poor patients, that it was thought worthy of public recognition, and in 1865 he was presented with a flattering address and a solid silver tea service "from the people and medical men of Sherbrooke and adjoining townships for services to the poor." Some years later he was the recipient of another handsome testimonial in recognition of his efforts in effectually stamping out a prevalent small-pox epidemic.

He was an able writer and had contributed a great many articles for medical periodicals, most of which appeared originally in this JOURNAL, and met with high approbation in the profession—so much so that many of his papers were copied into the medical journals of the United States and Great Britain. During the last few years of his life being almost entirely confined to his house, he employed his leisure time in writing reminiscences of his early student days and sketches of incidents which occurred during his practice of the profession.

His great abilities as a surgeon will be missed in the Eastern Townships and throughout the country—the medical profession has lost one of its brightest ornaments and the poor mourn a good friend.

Medical Items.

—The *Practitioner* has been enlarged and its scope extended. Malcolm Morris is the new editor.

—It is officially announced that cholera has reappeared in Constantinople in a comparatively mild form.

—A new medical journal, entitled *La Clinique*, and edited by H. M. Duhamel, M.D., has made its appearance in this city.

—A life of the late Hon. Dr. John Rae, (M.D. McGill University, 1853,) the famous Arctic explorer, is in preparation by his widow.

—Dr. J. E White, of Toronto, died on the 21st of January. For a number of years he was Secretary of the Ontario Medical Association. The flourishing state of this society is in a great measure owing to the late Dr. White's energy and ability.

—Two very prominent English surgeons have passed away, both full of years and honors. We refer to J. W. Hulke and Sir Wm. S. Savoy. The former at the time of his death was President of the Royal College of Surgeons of England, and it is chiefly to his exertions that the Research Laboratory of the conjoint Board was established.

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXIII. APRIL, 1895. No. 10.

Original Communications.

YEO'S MIXTURE IN TYPHOID FEVER—REPORT OF TWENTY-TWO CASES.*

By W. GORDON M. BYERS, M.D.,

Resident Medical Officer, Montreal General Hospital.

The cases upon which this paper is based were under the treatment of Dr. Wilkins, Physician to the Montreal General Hospital. This method was followed out at his suggestion, after reading the article in *The American Journal of Medical Sciences*, by Dr. Yeo, and I am indebted to him for kind permission to make free use of these cases, over which I had charge as his assistant.

The total number of cases coming under observation was twenty-four, but of these only twenty-two are available for notes, being the number in which the treatment was applied throughout the entire course of the disease.

Epidemics of typhoid fever vary so much from season to season, both as regards their virulency and centralization on special systems, that it would be unreasonable to draw any definite conclusions from so few cases; but the number is nevertheless sufficiently large to allow of a brief *critique* of the principles set forth, basing the remarks upon an experience derived from twenty-two cases.

For the benefit of those who may not be conversant with the subject I will try and synopsize as briefly as possible

* Read before the Montreal Clinical Society, February 16th, 1895.

the main ideas embodied in Dr. Yeo's article of June last and more fully discussed in his recent "Manual of Treatment." First of all, then, as to his mixture, which he orders to be prepared as follows: "Into a twelve-ounce bottle put thirty grains of powdered potassium chlorate, and pour on this sixty minims of strong hydrochloric acid; a greenish-yellow gas is at once liberated, close the bottle with a cork and agitate the mixture gently until the bottle is filled with the gas; then pour water into the bottle little by little, closing the bottle and well shaking at each addition, until the bottle is filled."

Concerning this he says: "We have in this solution several antiseptic agents all in a *state of solution* and readily absorbable, which is one of its great merits over antiseptics not in solution; free chlorine, hydrochloric acid, potassium chlorate, and probably one or two by-products. In twelve ounces of this solution I cause twenty-four to thirty-six grains of quinine to be dissolved, and some syrup of orange peel added to make it more agreeable to take; and of this to adults I order one ounce to be given every two, three or four hours, according to the severity of the case."

A consideration of the principal ingredients contained in this compound will give us an insight into two of the principles which the author recommends, and the first of these is:

(I.) INTESTINAL ANTISEPSIS by means of chlorine, or more correctly, a derivative euchlorine, the idea of its application in typhoid fever having been suggested to him as a result of favourable observations regarding its value as an antiseptic in certain "grave forms of throat ulceration occurring in cases of scarlatina maligna."

Dr. Yeo pleads for the adoption of this principle by saying that "It is well known that in the presence of putrefactive processes bacillary action is remarkably stimulated, and I am not aware that it has hitherto been pointed out that the intestinal lesions of typhoid fever offer a remarkable illustration of this fact. The glandular inflammation,

infiltration and ulceration observed in the walls of the ileum begin *just where the intestinal contents begin to undergo putrefactive decomposition*, and they become more and more intense as we descend to the ileo-cæcal valve. * * * * If we can restrain *early in the disease* these putrefactive changes in the intestine, we may confidently hope to restrain the morbid activity of the typhoid bacillus and thus we see how the production of *intestinal antisepsis* becomes an urgent and early indication in the treatment of these cases."

But intestinal antsepsis is to be maintained not alone by the administration of euchlorine; Dr. Yeo recommends in addition several other very important measures:

1. A calomel or other purge in the initial stage of the fever (if diarrhœa does not exist).

2. Washing out the large intestine twice daily with naphtholated water.

3. The adoption of "a method of feeding which shall by no possibility leave a bulky residue of unabsorbed material to undergo putrefactive changes in the lower part of the small intestine, and by its presence *there* excite and maintain diarrhœa and provoke an extension of the ulcerative and inflammatory changes dependent on bacillary infection of the intestinal glands."

4. The "administration of food in a dilute liquid form—food *that remains liquid in the body* as well as *outside* it."

5. The giving of "whatever intestinal antiseptic you may be using at the same time as the food, so as to keep it from putrefactive decomposition."

(II.) GENERAL ANTISEPSIS by means of quinine is the second principle, on the supposition that this drug acts as an "anti-toxic remedy," neutralizing the products of bacillary growth when once absorbed into the system, and producing "an anti-pyretic effect, due to a *general* antagonizing influence on the pyrogenic poisons in the tissues, rather than from any immediate or direct effect on the heat regulating mechanism"—an idea which is supported by many leading

therapeutists, but best expressed by Mitchell Bruce in his "Manual of Materia Medica," p. 596, as follows: "We may therefore conclude that the effect of quinine in the body is to check metabolism by interfering with the oxydation of protoplasm generally, with oxygenation, and with the associated action of ferments. Thus the fall of temperature produced by quinine is due to diminished production of heat in the body, not to increased loss of heat; it is effected through the tissues, not through the heat-regulating centre; and the fever causing processes themselves (probably allied to fermentations) are also controlled by the drug, which effects their organic causes, whether living organisms or complex chemical substances."

(III.) FEEDING constitutes a third and important part in Yeo's plan of treatment. "This intestinal antisepis," he says, "cannot be carried out without great consideration, care and observation in the matter of *feeding* the patient. * * * We must note carefully what digestive and absorptive activity exists in each individual case. In many this will be found to be *extremely small.* * * * It is the popular *mania* for feeding, which induces us to give food when it simply passes as an irritating, decomposing substance along the intestinal tube. Remember that it is useless and injurious in these cases to give food that is not absorbed. Estimate accurately the absorptive capacity of the patient. If he cannot absorb milk at all give him some other food. If he cannot absorb four pints in the twenty-four hours give him two, and if he cannot absorb two pints give him one, and if he cannot absorb more than one-half a pint give him one-half a pint.

* * * Give all food *very dilute;* milk should be diluted with twice its bulk of water. We wish for antiseptic and eliminative purposes to give as much pure water as the patient will drink. Give it then as a diluent of his food.

* * * I am not suggesting that milk should not be used in a diluted form whenever it is found to be

well tolerated and freely absorbed, but I would urge the necessity of exchanging it for other food, when it is seen that much solid though finely reduced casien is passing in the motions.

* * * I have again and again seen milk break down utterly as a food for typhoid patients. In some cases I have seen it vomited as a firm cheesy mass soon after it has been taken into the stomach." Of this we will speak later on, believing that in at least some of the cases mentioned the mixture and not the milk was at fault.

(IV.) SYMPTOMATIC TREATMENT—Under this heading one or two points may be briefly dwelt on:

(a.) *Pyrexia*—He objects to the use of anti-pyretics, but recommends phenacetin grs. v, when "hyperpyrexia is for the moment the all-important symptom of the disease."

(b.) *Heart Failure*—Regarding this he says: "As to the use of alcoholic stimulants, I believe the general tendency is to give them too early and in too large quantities * * * We have too much neglected those excellent cardiac stimulants, tea and coffee, in the treatment of fevers."

(V.) EARLY APPLICATION—"We must not expect," he remarks, "that success will uniformly attend the application of the method I have been advocating, *i. e.*, an antitoxic or antiseptic method, unless we are able to apply it *early* in the disease. Every day, every hour that is lost in allowing the products of the infective microbes to be diffused widely through the system will tend to lessen the efficacy and minimize the effects of our medicinal antagonistics."

It will be seen from the above synopsis, which must necessarily be somewhat disconnected and imperfect, that Dr. Yeo's treatment for the most part consists in the grouping together of a number of principles which have been and are more or less widely known and practiced by the profession. Thus, for instance, as far back as 1862, Murchison in his work on fevers makes the following comments regarding the use of quinine in typhoid fever: "Quinine

in large doses has been found equally inefficacious in enteric as in typhus. At the same time, in cases where the disease has presented a remittent character, I have frequently observed great abatement of the febrile symptoms follow its administration in doses of one or two grains frequently repeated." And again in another place he says: "Although I have never known enteric fever cut short by quinine and have found it in large doses as useless and injurious as in typhus, I have repeatedly observed the febrile exacerbations reduced in severity, the appetite improved and the strength increased under the use of the mineral acids and small doses of quinine, which may be prescribed as follows for an adult:

℞.—Ac. sulph. dil.
Ac. hydroclor. dil. - *aa* mms. xv. xxx.
Quin. disulph. - - gr ¼—gr i.
Syr. aurantii - - - ʒp.
Aq. carui *ad* - - - ʒi.

Fiat. haust. ʒi quæquæ tertia vel quarta hora.

So, too, some of the other ideas embodied in Dr. Yeo's paper are to be found in this same edition of Murchison's work. For example, he remarks that "Theine and caffeine, the active principles of tea and coffee, are also well worthy of trial, particularly in cases where there is much stupor," and that "elimination is to be encouraged by maintaining the action of the kidneys and of the skin."

Intestinal antisepsis, irrigation of the large bowel and many of the ideas on feeding are not original with Dr. Yeo. The merit of his treatment consists in the skilful employment of the best methods, no doubt after much thought and extensive clinical experience.

Our method of following the treatment at the General Hospital was as follows: On the admission of a patient with the disease well defined, or whose symptoms strongly pointed to typhoid fever without the diagnostic signs being actually present, we at once put him upon the mixture, generally beginning with the full amount, one ounce every two hours, and reducing gradually as the fever declined.

Milk was relied on as the chief article of diet, but wherever it seemed to disagree, and indeed in some cases where the patient expressed a dislike to it as food, beef tea, chicken broth, albumen water and other fluid nourishments were alternated or substituted altogether.

Three pints of milk was allowed to each patient on entrance, the quantity being varied later on as was seen necessary.

Dilution with water, lime water or soda water was practiced in degree from one-third to twice the bulk of milk, as recommended by Dr. Yeo. Some patients found it difficult to take such large quantities of fluid; at any rate I think it better to do as we did for a time—dilute the milk moderately and encourage the patients to drink freely of water at other times.

All food was divided into stated quantities and given at stated times, so that in so far as possible the administration of the food and medicine coincided.

At first we tried giving the medicine *in* the milk, but this had to be abandoned later on, for it was found that on the addition of the mixture the contained hydrochloric acid produced curdling in a very short time, with the result that the patients either objected to the milk entirely or vomited it shortly after drinking. After this the method was adopted of dividing the quantity of milk which was due into two portions and making the patients take a half before and after the administration of the medicine. This succeeded much better, although even then one or two suffered from gastric disturbance. These are details on paper, but important matters in a large ward.

The medicine to some became extremely monotonous, if I may use the expression, and it certainly did have a tendency to upset the patients' stomachs.

We did not in any case, for several reasons, carry out the plan of washing out the large intestine, believing rest and quietness for the patient, especially late in the disease, to be more beneficial than any good which might accrue from this procedure.

Constipation marked the majority of cases, as is generally true in Montreal, and we kept the rectum emptied by enemata of glycerine, soap-suds, or soap-suds with turpentine, where there was a tendency to flatulency.

We had no occasion to use an antipyretic. In one or two cases where nervous symptoms were present spongings at 80° F. for twenty minutes were employed, and like Murchison we "observed marked relief from their use."

In several instances we gave tea and coffee to the patients with benefit. Conservatism in regard to the too early use of alcohol is the rule at the General Hospital, but stimulation was found necessary sooner or later in eight of the cases. In only one instance, however, did the amount exceed six ounces per diem.

Such, then, was our line of treatment, it differed slightly in detail, but in the main carried out Dr. Yeo's therapeutic idea.

The benefits claimed for this method in Dr. Yeo's own words are as follows, and under the different headings I will discuss briefly the effect of the treatment:

1. "There is a remarkable cleaning of the tongue and mouth. The aspect of the tongue in cases so treated is frequently unlike the usual tongue of enteric fever."

Our experience does not warrant the word remarkable, for in the majority of cases in which the tongue was furred at the time of admission my bedside notes show that it continued so pretty much throughout the whole course of the fever. We continually observed, however, that the lips and tongues remained moist and the gums free from sordes, but even this was more attributable to the careful cleansing of the parts by the nurses than to any direct effect of the treatment.

2. "The foul putrefactive odour of the fæces is rapidly removed if this remedy be given sufficiently often and in sufficient quantity, for this fluid and perfectly soluble antiseptic certainly reaches and passes through the small intestine, as the nurses constantly report the odour of chlorine in the alvine evacuations."

In the general Hospital cases the effect of the mixture on the alimentary excreta was also most marked. A careful examination of the stools showed that in the great majority of cases the odour was *much diminished;* in not a few there was absolutely *no odour;* in a limited number the stools seemed to be entirely unaffected by the treatment. Contrary to Dr. Yeo's experience in only one instance could the smell of chlorine be detected; but in the ward where the treatment by baths and this method were being carried out at the same time the effect of the antiseptic in this direction was very noticeable.

It seems hardly possible that the administration of a drug, which can bring about the results stated above, could be productive of anything but good.

It is more than likely that typhoid fever is dependent upon the absorption into the system of not one, but several toxic substances. It may be that the ptomaines of the typhoid bacilli are the most important, and no doubt are; but the septic temperature of the third and fourth weeks undoubtedly shows the handiwork of the pus cocci, and evidence is not wanting that the putrefying fæces themselves may throw back toxic substances into the system.

Again, the typhoid bacilli must at least depend to a small extent for their development upon the fæcal decomposition, or in other words, the fæcal decomposition favours their growth, and a prevention of this means a restriction of their growth and power of producing toxic substances. For the same reasons the ulcers when once formed are scientifically, and no doubt beneficially bathed, by the antiseptic; and if the third factor were true products accruing in this way would be reduced to a minimum. One is at least rational in theory in carrying out intestinal antisepsis, and many are not wanting who claim for it the best of results at the bedside.

Apart from other considerations one would think that the disinfection of the stools and the prevention of the

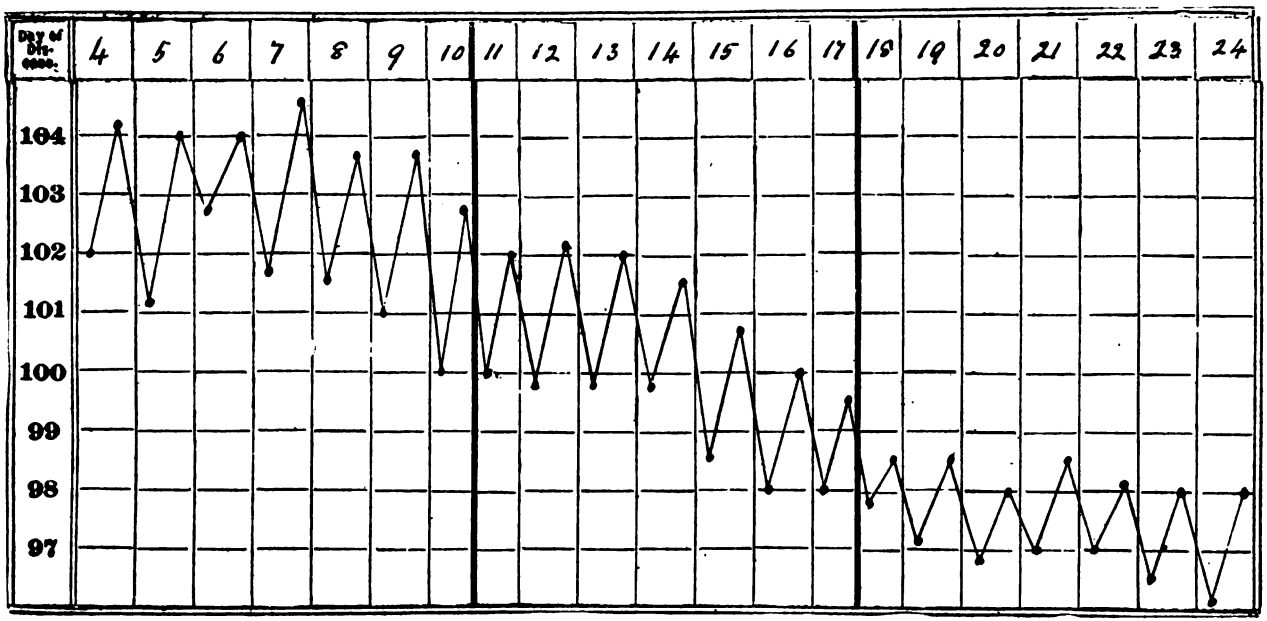

CHART I.*

Showing "a continuously favourable effect on the pyrexia."

* Charts shown are "maximum" charts, i e., record the highest and lowest temperature during the twenty-four hours, as seen by the two-hour charts.

accumulation of putrid gases would lessen the tendency to distention, tympanites, etc. For the reason again that epidemics vary so much as regards their location in special parts, positive conclusions are not possible, but I present a summary of the cases as regards these points, which is on the whole very favourable .

1.	Cases with no distention on admittance in which none developed		11
2.	Cases with distention on admittance which—		
	(*a*) Improved	5	
	(*b*) Remained unaffected	5	
	(*c*) Became worse	1	
		—	11
			22

Under this heading it may be stated that three of the twenty-two cases had well marked hæmorrhages—a somewhat high percentage. It may be, as was suggested, that the chlorine has some effect in favouring hæmorrhage in eating away the sloughs and exposing the small vessels of the ulcers.

Perforation was the cause of death in one of the two fatal cases. This patient, however, did not enter the hospital until the twenty-second day of his disease.

3. "Another important effect of this treatment is a sustained depression of the febrile temperature—a continuously favourable effect on the pyrexia. The pyrogenic toxine seems to be under control, or continuously neutralized or excreted."

The effect of the remedies on the course of the fever varied greatly. In some instances we certainly noticed the "sustained depression of the febrile temperature" spoken of ; while in others the fever ran its usual cycle quite uninfluenced by the treatment.

I show the charts of two cases, both of which came under early observation, to illustrate how diverse were the results in different cases. Chart I. shows "a continuously favourable effect on the pyrexia," and is but a fair type of several of the fever records. On the other hand, a glance at Chart II. will show that not only was the fever

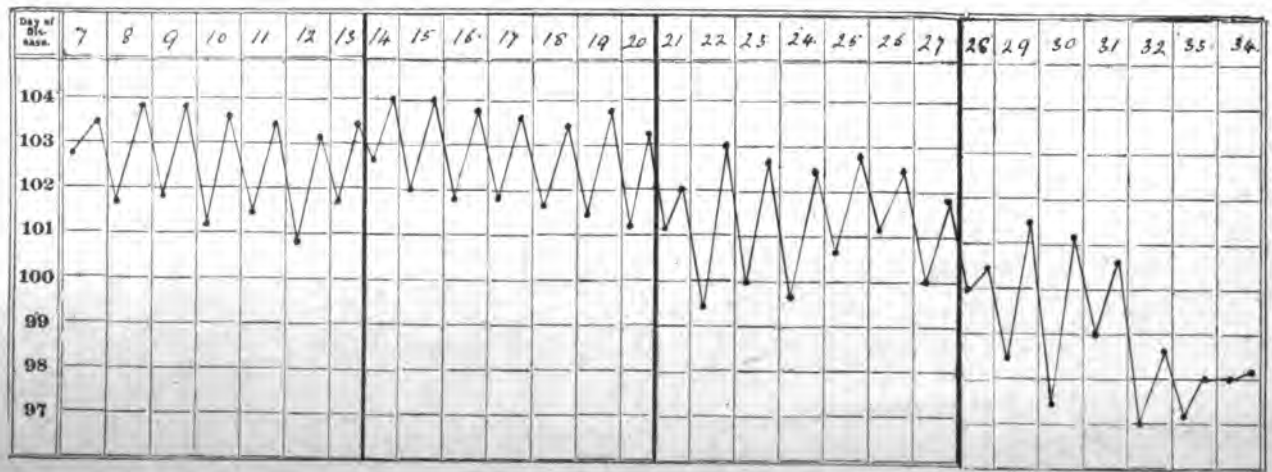

CHART II.

A case in which the fever ran its course uncontrolled by the treatment.

not cut short, but that the continued pyrexia of the second period was continued on a full week longer as compared with the classic typhoid chart.

The third chart, which I present for your inspection, is that of a young man of twenty-one, who began this treatment on the fourteenth day of his illness, and is interesting as showing the primary rise in temperature, which Dr. Yeo pointed out as occurring during the first twenty-four to forty-eight hours after the administration of these remedies; and which he says "appears to indicate that the antipyretic effect is due to a *general* antagonizing influence on the tissues rather than from any immediate or direct effect on the heat regulating mechanism." The chart also records a rapid favorable effect of the remedies on the temperature; a secondary rise of temperature on the medicine being lessened in quantity; and a final drop to normal on the remedy being increased to the full amount.

4. "In certain cases, especially in young subjects and if the treatment has been begun quite early in the cases, the average course of the fever appears to be notably shortened."

In this connection also the cases differed widely: Chart I. is that of a boy of fifteen, who came under treatment on the fourth day of his illness—in every way a favorable case with a favorable result. In another lad of thirteen, seen within a week of the commencement of his illness, the fever terminated on the twenty-fifth. On the other hand again, Chart II. is that of a youth, who likewise came under early observation—seventh day—the result being unfavorable.

Arbitrarily taking the eight day as a period, before which the cases may be said to have been seen early, both as regards the onset and the changes occurring in the intestines, I made an analysis and comparison of the average number of days of fever of the cases coming under observation, before and after this period, with the following result: I found that in the thirteen cases coming

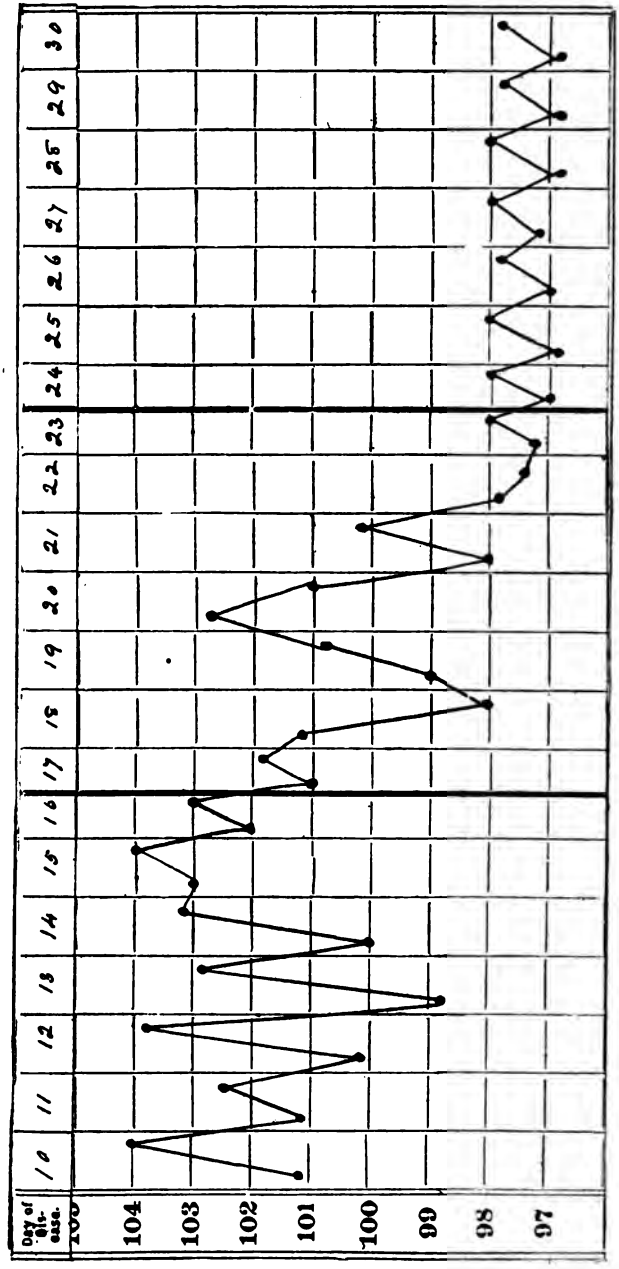

CHART III.

Treatment began on fourteenth day. Chart shows primary rise (fifteenth day) and effect of a reduction and subsequent increase of the remedy.

under treatment before the eighth day, the average number of days of fever was a little over twenty-five, while the average for the nine cases coming after this period was something over thirty-four—a difference of nine days in favour of the early cases.

This was certainly a beneficial effect, but the exponents of almost every method of treatment claim, with truth, better results for their remedies when applied early in the disease. I have seen charts quite as favorable as No. 1, of cases sent *early* to bed with simply a carefully regulated diet and good nursing.

V. "There is another very striking effect of this treatment, and that is, that the patients seem subjectively so much less disturbed by the fever poison. Their physical strength and intellectual clearness are far better maintained than by any other method of treatment with which I am acquainted. In many cases the nervous system shows none of the signs of febrile intoxication which we have been accustomed to see."

It may be that the toxines of the disease played lightly with the nervous system in this series of cases; but certain it is that few of the signs of "febrile intoxication" presented themselves. The mind in the great majority of cases was clear and bright throughout the entire course of the disease. In only three of the cases without nervous symptoms on entrance, did slight delerium and tremor develop, and of these, two were affected only after complications had set in. On the other hand in one case, which came in with the most pronounced nervous symptoms, the treatment seemed to have a most beneficial effect. The patients for the most part rested quietly during the day and slept well at night.

Nor did the cases present that extreme degree of emaciation and pallor, which is generally present late in the disease. Some of them retained colour all through, and they compared more than favorably with cases under the bath treatment in the same ward.

6. " Finally their convalescence is more rapid and complete, and troublesome sequelæ, so far as my experience has extended, are unknown."

Although it was commonly remarked, and in special cases seemed very apparent, it would be difficult to show certainly that these patients convalesced more rapidly than others under different treatments, and with this I will dismiss this point.

Complications and sequelæ were, however, not unknown to us. Of the two fatal cases, one (though hardly a fair case to judge from) as has been stated, died of perforation, the other of a frank pneumonia, involving the right lower lobe, acquired after the temperature had declined to the normal line. Another case dragged on through two relapses, and had later on several peculiar chills which could not be explained by repeated examinations of the urine or enquiry into the different systems. No doubt they were due to some obscure septic condition. Thrombosis of the veins of the legs occurred in one instance.

HYPERTROPHY OF THE HEART

By JAMES STEWART, M.D.

Professor of Clinical Medicine, McGill University, Montreal, and Physician to the Royal Victoria Hospital.

I have been assigned the duty of dealing with the causes of cardiac hypertrophy other than those due to valvular disease. Perhaps it would have been better if the term enlargement of the heart had been used instead of hypertrophy, for the reason that a* pure and simple hypertrophy is rarely met with. I will confine my remarks chiefly to hypertrophy, but it will be necessary to refer frequently to the almost constant presence of dilatation.

The causes of cardiac hypertrophy have been recently attracting great attention, but not more than the condition merits on account of its great practical importance. No doubt a great deal can be done to stay the progress of an advancing hypertrophy if the cause or causes at work are clearly recognized.

A discovery of the causes is essential to judicious therapeutics.

I can only deal with the more important cardiac hypertrophies, and even those must be dealt with briefly.

The principal causes of cardiac hypertrophy other than disease of the valves, of the myocardium and of adherent pericardium can be divided for the sake of convenience as follows:

1. Organic changes in the arterial system, including obsolesence of the capillaries, and also congenital narrowing of the arteries.

2. The overfilling of the circulation.

3. The circulation in the blood of either foreign substances, or an excess of substances which in small quantities is a normal state.

* Being an introduction to a discussion on Idiopathic Cardiac Hypertrophy read before the Montreal Medico-Chirurgical Society, February 22nd, 1895.

4. Causes that act in a manner still unknown on the general or cardiac nervous system.

1. *Arterio-Sclerosis*—This is one of the most frequent causes of cardiac hypertrophy and within the past few years has attracted great attention. It is, as is well known, a frequent condition after the fiftieth year, but it is not by any means a constant change in the physically degenerative period of life. It is not uncommon to often find the arteries of aged people free from any such change. Bamberger mentions that on several occasions he has found the arteries free from sclerotic changes as late as the ninetieth year. Then there is the famous case recorded by Harvey where sound vessels were found in a man at the very advanced age of 153 years.

Although it is uncommon to meet with marked sclerosis under the thirtieth year, it still occurs sufficiently frequently to make it matter of great clinical interest and importance.

The most important form of arterio-sclerosis is that which occurs as a diffuse process, in men from the thirtieth to the fifty-fifth year.

Councilman, at the meeting of the Association of American Physicians in 1891, read a valuable paper on the connection between arterial disease and tissue changes. His observations were founded on the examination of forty-one cases which had been autopsied at the Johns Hopkins Hospital. He divided arterio-sclerotic changes into three different groups—the nodular, senile endarteritis and the diffuse arterio-sclerosis. All these varieties are followed at times by hypertrophy of the heart.

In the nodular form the changes are limited to the aorta and large arteries. The aorta is covered here and there, especially at its origin, with elevated patches, cartilaginous or calcified in appearance. Otherwise the lumen of the vessel presents a smooth aspect.

In this nodular form of arterio-sclerosis hypertrophy of the heart is very common. In advanced cases it is to a great or less extent almost constant, the loss of elasticity

in the vessels throwing more work on the heart. When the heart increases in size it in its turn tends to increase the arterial changes, so that we have the one condition keeping up the other, a morbid circle being formed.

In the typical senile endarteritis, the aorta and its larger branches are converted into almost rigid calcareous tubes. The arteries are irregularly dilated and lengthened. Cardiac hypertrophy is not as constant a result of the senile endarteritis as it is of the other varieties. This is in a great measure due to the obsolescence of so many of the smaller arterial branches as people grow older. It is brought about by the loss of the elasticity in the arteries, so that the blood flow in the capillaries from being continuous becomes intermittent and in many areas finally ceases.

No doubt hypertrophy of the heart in a certain sense must of necessity occur when the vessels have to a great extent lost their elasticity, but owing to the cutting off of capillary areas this hypertrophy is more relative than absolute.

"The changes in the arteries due to age proceed slowly, imperceptibly, and so far as the individual himself is concerned unconsciously. If the heart responds normally to the calls for extra exertion demanded of it, the individual gradually descends into the vale of years quite unconscious whether he has a heart or not. If this knowledge is forced upon him, trouble is not far off."—Balfour *(The Senile Heart.)*

The diffuse form of arterio-sclerosis is in many respects the most important; here the arterial changes are widespread, affecting the whole arterial system to a greater or less extent. More than half of Councilman's cases were examples of the diffuse varieties, the youngest being a negro aged twenty-three, the oldest was a man aged sixty. The great majority of cases ranged in age between forty and fifty-five. Hypertrophy was present in every case, in some it reached an extreme degree.

Myocardial changes were found to be frequent, their ex-

tent depending on the degree of involvement of the coronary arteries in the sclerotic process. Dilatation of the heart is nearly always a constant accompaniment of the diffuse sclerosis of the arteries. In fact, in all varieties of sclerotic arteries the heart is not only hypertrophied, but also dilated. Cohnheim has said that the great majority of all idiopathic cardiac hypertrophies are eccentric and that non-eccentric hypertrophy has chiefly a theoretic interest. The dilatation in these cases may be so excessive as to give rise to leaking of the valves.

Clinically there is a difference between the diffuse arterio-sclerosis and the senile endarteritis, the former being characterized by the high arterial pressure, a condition which is not present in the latter, at any rate, when pure and simple. If however, the kidneys have undergone degenerative changes the arterial pressure will be increased.

The difference in the two states is chiefly accounted for by the slowness of onset in the senile disease as compared with the quicker process in the diffuse form. In the former the atrophy of tissue is also greater.

The chief cause of arterial degeneration in advanced life is the natural decay of tissues. In the diffuse form the primary event is a degeneration of the media of the large and small arteries. As to how this is brought about opinions differ. There can be no question that the resisting power of the arterial tissues varies much in different persons. In many people they are the weakest spot—the *locus minoris resistentiæ*. There is abundant proof that this proneness to early decay is frequently hereditary. As to the exciting causes of early decay the following may be mentioned, over-eating, the constant use of alcohol, especially beer, excessive smoking, hard manual labour, athleticism, poisoning by lead or mercury, retention of uric acid (so-called gouty arteritis), the toxines of the various infectious diseases, etc.

In a recent paper in the *Journal of Pathology and Bac-*

teriology Hollis suggests that the entry of various micro-organisms played a leading part in inducing atheromatous changes.

I will first say a few words in regard to the abuse of alcohol in inducing hypertrophy of the heart secondarily through producing arterio-sclerosis and primarily without any arterial change whatever. In Germany, where beer is the favourite beverage, what is commonly known as the Munich beer-heart is very common. It is the form of heart lesion in more than 55.3 per cent. of all heart cases. It may exist with or without any arterio-sclerosis. In the great majority of cases, according to Mohr, it exists independently of any arterial changes. The fact that in countries where stronger alcoholic drinks are consumed than in Germany, renders it highly probable that the cardiac hypertrophy from the use of large quantities of beer is due, more to the filling of the vessels with fluid than from any direct action of the alcohol itself. The quantities consumed daily by every steady beer drinker in Germany amounts to three or four quarts—five, six and even seven quarts is the daily allowance of not a few.

"Four quarts of beer contains about eight ounces of hydrocarbons in solution, and therefore capable of complete absorption into the circulation."—Strunpell.

It is therefore easy to understand how the heart is overburdened, especially when one considers that obesity is present as a rule in those who use beer so freely. In some cases it would seem that alcohol has a direct action in causing increased pressure in the vessels. Even allowing that alcohol may have no direct influence in bringing about the hypertrophy of the heart, it no doubt promotes the degenerative changes in the heart muscle and cardiac nerves, which at least render the heart's action inadequate and the circulation imperfect.

The consumption of excessive quantities is generally found in those who eat to excess and who are engaged in severe toil—all causes which tend to induce cardiac hyper-

trophy. In indolent people we have obesity which is in some respects as injurious as excessive work.

The consumption of large quantities of food and beer gives rise also to a hyperæmia of the intestinal vessels, which greatly increases the pressure in the arteries. It is generally allowed that strong tea, coffee and tobacco have a direct action in causing increased pressure in the arterial system. They are all promoting causes of the cardiac changes. Seldom do we find any one prominent. Practically we nearly always find over-eating, drinking, smoking, the excessive use of tea or coffee, together. Nicotine in the lower animals causes a great fall of blood pressure, but from this we are not to conclude that the continuous use has not an opposite action on man, as has been done.

The course of this hypertrophy varies considerably. In the great majority of cases it is found that the increased power is sufficient for a lengthened period to carry on the circulation compatible with a fair degree of health, but in not a few cases, especially in excessive beer consumers, an acute heart failure sets in, which rapidly proves fatal; this often happens without any degenerative changes in the heart muscles. Bauer has reported a number of cases where heart failure has set in a very short time after the hypertrophy developed and in which fatal result followed —a veritable heart paralysis, as he calls it. In the majority of cases if the cause is not removed gradual degenerative changes go on in the heart muscle, which finally lead to general dropsy.

Another important cause of cardiac hypertrophy is overwork, leading to strain of the heart muscle. Both ventricles are usually involved, and dilatation and hypertrophy are always found together. It is met with in those whose work entails severe muscular efforts. On superficial examination such patients usually present a very healthy appearance. On physical examination, however, the chest is found to be barrel-shaped, and the second sound, both aortic and pulmonic is accentuated. It has been met with

in soldiers, especially during active service in the field. DaCosta, Frantzel and many others have contributed valuable papers on this particular form of heart strain. It does not differ, however, in any respect from that met with from other forms of over-work.

In a recent paper on cycling, B. Wood Richardson points out that the ultimate action of excessive cycling is to increase the size of the heart, to render it irritable and hypersensitive to motion, the cycling acting upon it like a stimulant. The over-development of the heart under the continued and extreme over-action affects in turn the resilience, modifies the natural blood pressure, and favours degenerative structural changes in the organs of the body generally. Every medical man here must, I think, have met with instances of cardiac hypertrophy in athletes. There can be no doubt, that in such a violent game as lacrosse this condition develops. Cardiac hypertrophy from overwork may be recovered from, or it may go on to progressive heart failure. It develops more rapidly and more often affects those who at the same time use alcohol in any form to excess.

It is easy to understand how severe muscular efforts bring about hypertrophy of both ventricles.

Very rare causes of cardiac hypertrophy are congenital narrowing of the arteries and general dilatation of the blood vessels. The former is, according to some, far from rare, and it is held that in many cases of enlargement of the heart from over-exertion the predisposing cause is congenitally narrow vessels.

In severe cases of lead poisoning cardiac hypertrophy is very commonly met with, due mainly to the parenchymatous and interstitial changes in the kidneys and arterial sclerosis. These arterial and nephritic changes are very constant phenomena of severe lead poisoning.

The explanation usually given of the action of lead on the kidneys and arteries is that it induces gout. Sir William Roberts, however, believes that lead does not in-

duce gout. He considers that the gouty diathesis and lead poisoning, while differing in all other respects, have one tendency or vice in common, viz, the tendency to uratosis. However the facts may be explained there can be no doubt about the influence of lead in bringing about sclerotic changes in the kidneys and arteries and thus leading to hypertrophy. These changes, next to the encephapathy, constitute the most serious effects of lead poisoning, effects which if their cause is not early recognized will infallibly lead to irretrievable mischief.

Cardiac hypertrophy is the most constant change in the heart in gouty subjects. It is nearly alway present, differing in degree accrding to its intensity and age of the patient. It is in some cases combined with dilatation and myocardial changes, especially fatty degeneration. It is caused by the widespread arterial and kidney changes so common in gouty subjects. In forty-nine cases examined by Dr. Norman Moore the average weight of the heart was 16½ ounces. Gout may cause hypertrophy without first bringing about arterial organic changes. In this connection it will be convenient to discuss the cardiac hypertrophy which is so frequently found in cases of sub-acute and chronic Bright's disease. The variety of Bright's disease which is most frequently attended by cardiac hypertrophy, is the interstitial. For many years the connection between the circulating and kidney changes has been a subject which has given rise to a great deal of discussion.

There is no doubt that cardiac hypertrophy may occur in a simple Bright's disease without any involvement of the general arteries. We have probably two factors contributing to the hypertrophy, the increased pressure in the circulation caused by the necessity of getting rid of waste matters. As a great number of capillary districts are obliterated by the disease, the heart must increase in strength in order to effect the necessary elimination; but the chief cause for the hypertrophy of the left ventricle is

the retention in the blood of matters which in a normal state of the kidneys would be eliminated. This causes high arterial tension and gives rise in consequence to increased work and consequently to hypertrophy.

The last group of causes giving rise to cardiac hypertrophy which it is my intention to speak of is the neurotic group. To this belongs the enlargement coming in exophthic goitre, essential tachycardia, insanity, prolonged emotional disturbance, etc. The excessive action of the heart in these cases leads to enlargement, but little is known about the intimate changes in the nervous system which brings them about. Our knowledge of the changes which take place in the nervous mechanism of the heart is very slight indeed. It is highly probable that in the case of heart changes coming on during the course of exophthic goitre, essential tachycardia and from the excessive use of tobacco, tea and coffee, the changes are of a molecular nature. There is very good grounds for believing that all the essential symptoms of exophthic goitre are due to the action of certain toxines generated from the thyroid gland. Possibly it may be found that essential tachycardia is brought about also by a chemical poison generated within the body. The hypertrophy and dilatation of the heart occurring in exophthic goitre reaches sometimes an extreme degree, and cases are not uncommon where death is the direct result of degeneration occurring in the heart muscle I am not aware of any fatal case of tobacco-heart. It is quite possible that such a heart might give way at last under the continuous strain, but fortunately the cause is easily detected, and if removed the effects disappear, although to this there are rare exceptions. An abiding palpitation has been described even after tobacco has been given up.

The enlargement of the heart occurring in the course of infectious fevers is mostly due to dilatation of the cavities, and hence is properly beyond the range of my subject. The subject is one of very great importance. I recently saw a

case of typhoid fever where a fatal result came about indirectly, if not in a measure directly, from heart dilatation consequent on a secondary infection.

A word more about the symptoms and physical signs of cardiac hypertrophy.

The recognition of cardiac hypertrophy is easy when it is well marked, but difficult, if not impossible, when slight. There is seldom any pronounced subjective symptoms while the cardiac muscle retains its normal vigour. It is only when degenerative changes have set in that the patient feels that he has a heart. When this takes place the symptoms do not differ from those of cardiac failure brought about from valvular disease.

The physical signs of an hypertrophied left heart are increased tension in the radials, well-marked apex beat and accentuated aortic second sound. When the right heart is hypertrophied we have an accentuated second pulmonary sound. These signs are only of value as pointing to increased tension in the various vessels, and when this has lasted some time we naturally conclude that there is hypertrophy. If however, a cause which has been in operation for some time is no longer present, the signs of increased tension will have disappeared, although the hypertrophy remains. Percussion is no doubt of value in many cases in detecting marked hypertrophy, but for slight degrees it can give us no reliable information. The shape of the chest has much to do with the extent of cardiac dulness. When it is barrel-shaped a large heart will present a no greater degree of dulness than a small heart in a flattened chest. A great degree of dulness can only take place in dilatation. Again, a large heart may be more or less entirely covered by an emphysematous or hypertrophied lung.

TWO COMPLICATED BREECH CASES OF LABOUR.*

By G. A. Brown, M.D.

Two difficult breech cases of labour having occurred in my practice within a short space of time and having the same complication, I thought I would report them and at the same time say something of the method of treating the complication.

Case 1. Mrs. B., aged 32, medium-sized woman; has been fairly healthy; has had two children, the first was an eight months' child, and the second went to full term. During all the time that she carried her children she complained of persistent vomiting, and when pregnant five years ago the vomiting was so severe that artificial abortion was performed for her relief. When she became pregnant this last time I put her on small doses of chloral and bromide, which controlled her vomiting, and she had good health after the third month. About one month before labour she fell down-stairs, which might account for the complication present during labour. Her labour began Wednesday, October 3rd, at 2 p.m.; pains were strong and and frequent; membranes ruptured at 4. At 5 o'clock I saw patient and made an examination, and found the breech presenting in the left dorso-anterior position and well down, almost touching the perineum. Fœtal heart was strong. From 5 to 9 o'clock there was no change in the position of the breech, although the pains were very strong and frequent. At 9 o'clock the pains began to grow weaker, and as there had been no advance of the fœtus I decided to give chloroform. After the patient was anæsthetized I made an examination and found the legs were extended, forming a wedge with the arms and head. The forceps were applied to the breech several times without moving it to any extent and always ended in slipping.

* Read before the Medico-Chirurgical Society, December 28th, 1894.

Traction by means of a finger in each groin was made without any result. I then succeeded in introducing my hand in utero and seized the foot of the anterior limb by the instep, flexed the left leg on the thigh by sweeping it across to the right side of the child's chest, and at the same time rotating the knee outwards and everting the thigh. The limb was delivered by internal rotation of the thigh and extension of the leg. The fœtus having turned cynotic at this time I endeavored to deliver it hurriedly, but it seemed to be still further arrested and on examination the arms were found to be extended. The posterior arm was easily delivered, but on making traction on the fœtus the anterior arm became locked between the head and the symphysis pubis. As the child was dead and the arm could not be dislodged I severed it from the chest wall and delivered by tying a noose around it. The head became extended during my manipulations and I had difficulty in causing flexion before delivering the child. The time for these manipulations was about one hour and a quarter. The patient made a good recovery. Her temperature rose to 100° F. on the third day and fell to normal on the sixth.

Case 2. Mrs. F., primipara, age 44, is a large well developed woman; has been fairly healthy, no illness of any extent; has been married twenty years; family history tubercular, one brother and sister having died of phthisis. Patient came to me in August complaining of an abdominal tumour, which on examination proved to be pregnancy. Her last menstrual period was January 20th, and vomiting did not set in until the end of March. Felt life about the end of June. On October 18th I made an examination of the patient as she was complaining of severe pains in the abdomen. The breech was found presenting in the left dorso-anterior position. At this time no abnormality was discovered. Pains having ceased I did not see patient until November 29th. She had complained of œdema of the legs and frequent micturition during the intervening time, and two days previous to her labour had severe pains off and on. Labour began at 2 a.m. Thursday.

The pains were good and strong up to 6 a.m., when I saw the patient and made an examination; found the os dilated to about the size of a fifty-cent piece and the breech presenting in the left dorso-anterior position. Fœtal heart normal. Pains continued strong and frequent up to 11, when they began to grow weaker and less often. On examination the os remained about the same and there was no advance in the breech. Patient was feeling pretty well played out and complained of severe headache. I decided to give her chloroform and deliver the breech. Patient being anæsthetized, on examination there was found extension of the legs forming a wedge with the head and arms. As in the former case, I decided to introduce my hand and break up the wedge. The os being dilated manually the hand was with difficulty introduced, and the instep of the anterior limb seized and the leg delivered as before. After this the arms were delivered before traction was made on the fœtus, thus avoiding the accident which occurred in the previous case. After delivery of the arms traction was made without result, as the fœtal head was arrested at the brim. I attempted to apply forceps, but failed, and on bimanual examination the head was found very large and fluctuating, and the diagnosis of hydrocephalous was made. I then severed the vertebral column in the dorsal region and passed up a gum-elastic catheter to the cranial cavity and drew off one gallon of fluid. The fœtal head was then easily delivered by traction on the body. Time for manipulations was about thirty minutes.

The measurements of the fœtal head were as follows: Occipito r tal 20½ inches, bregmatic 21 inches, occipito-mental 21¾ inches. The placenta was about 3½ by 4½ inches and was very soft and friable. About two hours after labour patient had post-puerpural convulsions, which were very severe and which lasted for three hours and were controlled by chloroform, chloral, bromide and a purge of hydrarg. subchlor. with pulv. jalap co. The urine contained 2 per cent. of albumen. Patient made a good

recovery. Lactation was established on the fifth day and with it a little rise of temperature, which fell to normal on the following morning. Albumen disappeared on the sixth day.

As will be seen by the method adopted in the second case, I profited by the experience gained by the first. Had I followed this method in the first case I am sure I could have delivered a living child. There are several methods of dealing with this complication. First, forceps; second, soft fillet or hook; third, introduction of the hand up to the fundus, seizing a foot and delivering it, thereby breaking up the wedge by causing extension of the vertebral column.

Forceps are recommended by many good authorities, as Tarnier, Lusk, etc., but I think that it is a waste of time to apply them, as they are fitted to the thin end of the wedge and in nine cases out of ten are bound to slip and cause a great deal of damage to the maternal tissues. Besides, traction cannot be made in the right direction, that is, usually to the right or left side, in order to change the flexion of the vertebral column to extension, which is a most important thing in breaking up the wedge. Another danger of repeated application of forceps is perhaps to stimulate the child to breathe and cause its death in utero.

The soft fillet is still recommeded by different authorties but there is often great difficulty in applying it, and it takes a great deal of time, and even then one is not always successful. There is also danger of lacerating the child's tissues and fracturing the femur. The third method seems to me to be the most scientific, and is therefore the best, as it breaks up the wedge, is quickly performed, and causes less damage to the fœtus and maternal soft parts. If one should fail to introduce his hand owing to contraction of the pelvis or tetanic spasm of the lower uterine segment I think that the soft fillet would be the best and surest method of delivery.

The second case having had a complication of hydrocephalus, the cause of which is obscure, I would suggest a possible explanation of this case and be glad to have an expression on this subject from the members.

We had here disease of the mother's kidneys and of the placenta, which performs the same function in the child, Why should not local dropsy occur in the cranial cavity in the child just as ascites occurs without general œdema in the adult? The fact that the head receives the freest circulation in the fœtus would determine the site of the fluid effusion.

Hospital Reports.

CLINICAL NOTES ON SOME UNUSUAL TYPES OF TYPHOID FEVER OBSERVED IN THE ROYAL VICTORIA HOSPITAL DURING THE YEAR 1894.

By James Stewart, M.D.

CASE I.

Typhoid fever setting in with meningitic-like symptoms---Intense headache---Island Scotoma---Vomiting---Extreme hyperæsthesia---Retraction of the head and neck---Intolerance of light and sound---Marked stuporosity---After the 9th or 10th day the course of the fever was that of a moderately severe attack---Ten days after the temperature became normal in the evening symptoms of neuritis of the lower extremities were manifest---Disappearing after a few days---Complete recovery.

It is not uncommon to meet with cases of typhoid fever where, during the first few days, the intensity of the headache and the presence of vomiting, makes one suspect the presence of an acute meningitis. It is rare, indeed, to have such a collection of symptoms as were present in the following case.

The intense headache, with vomiting, the stuporous state, retraction of the head and hyperæsthesia formed a clinical picture pointing strongly to inflammation of the cerebral meningies. This was further strengthened by the changes in the retina.

The central scotoma were found five days before his admission, and it was then thought that it was almost certainly an acute cerebral meningitis. It was not till the 8th or 9th day of the disease that it was possible to be certain that the case was typhoid fever. The copious typical rash and the enlargement of the spleen, together with the subsidence of the headache and hyperæsthesia and the disappearance of the stupor making matters clear.

It may be contended by some that the cerebral symptoms were actually due to a meningitis which passed away. It is, however, much more likely that they were of a functional character, induced by the blood intoxication. The patient is neurotic as evidenced by his being subject to neuralgia and migraine. The retinal scotoma varied from day to day. A patch that was found one day amaurotic was only ambryopic the following day. This could hardly be caused by gross changes in the optic nerve or its terminations. The scotomata resemble those that have been met with in functional disease (hysteria).

It is a question whether the post febrile symptoms were entirely organic, entirely functional, or partly one and partly the other.

Their rapid disappearance is hardly consistent with an amount of change necessary to account for such decided symptoms. The considerable loss of power in the extremities with the marked skin and muscular hyperæsthesia—especially the latter—point to an organic base with a superadded functional disturbance.

[REPORTED BY F. M. FRY, M.D.]

The patient was E.H., a male, aged 32, of small frame and stature, but well nourished and very intelligent, was admitted into the hospital on the 27th November, 1894.

His complaints were "severe pains in the head, back and stomach, with loss of appetite and general listlessness."

In getting the history of the present illness, it was ascertained that during the last five years he had been subject to severe headaches, which were described as being sometimes neuralgic, and at other times being sick headache, accompanied by nausea and vomiting.

These headaches occurred once or twice every week, lasting many hours or a whole day, and were precipitated by exertion, by a draught, or by the very smell of chemicals.

The headaches, however, never prevented his sleeping well at night, but he always "slept too heavily." He

always noticed before a headache occurred a feeling of "dulness and heavy eyes."

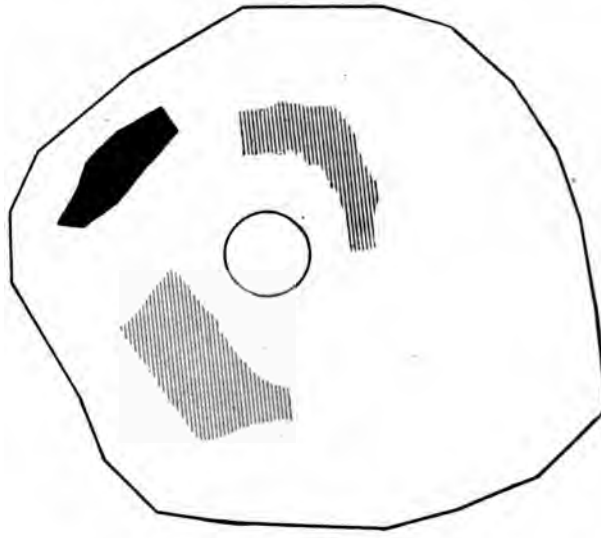

Fig. 1. Right field.

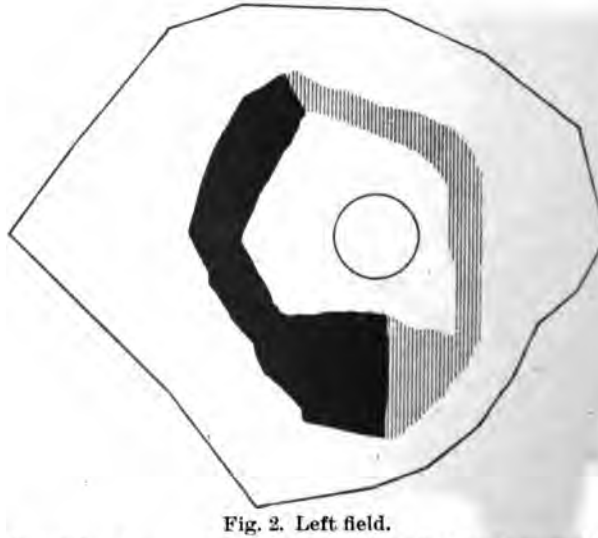

Fig. 2. Left field.

Dark patches represent total loss and shaded parts partial loss of vision.

Six days previous to his admission into hospital, the intensity of the headache was such as to suggest the likelihood of a meningitis. Dr. J. W. Stirling examined the eyes and found the fundus of both eyes somewhat hyperæmic and distinct patches of lessened or extinct vision in both fields.

In the left eye, as illustrated in the cut, the disturbance of vision forms a ring scotoma, in the outer half of which vision was nil, while in the inner half the vision was only diminished.

In the right eye, three Island scotoma were found, one representing total loss of vision, while the loss was only partial in the other two. On the following day, Dr. Stirling made a second careful examination and found the spots which were completely blind the previous day only partially so.

Four days before admission the headaches became more severe, and they were now continuous, except for a few hours at night. His appetite, which had kept excellent, failed him on the fifth day before admission, and the headache became worse each day. There was no diarrhœa, melæna, abdominal pain, nor epistaxis.

Three hours before admission he was bothered by vomiting of a green material, and so tender was his skin that the lightest touch, or the mere weight of the bedclothes, made him jump off his bed in pain.

In his family there is a history of epilepsy in one brother, aged 9. No other neuropathic history. Father died of heart disease at 53 years.

His personal history is that of an active young man, enjoying good health. He was born in Cambridge, Eng., in 1873, moved to London in 1878, and to Montreal in 1892, working as pathologist's assistant.

Habits have always been regular. He smokes considerably. Had searlet fever when very young and never had rheumatism.

On admission on November 27th, the patient lay motion-

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tric acid brought out a crystalline layer
The temperature on these days only
in the twenty-four hours, averaging 103°.
slightly formed, greenish and very offen-
was considerably enlarged on percussion,
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pains in the abdomen.
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by most regular steps through nine days, after
emained normal or slightly sub-normal.
tenth day of normal temperature he was given
nd soft food, and when two weeks of normal tem-
was reached, he was allowed to sit up for a few
A plain, soft, systolic murmer heard at the apex
heart during ten days of his fever, was now quite
The pulse was exceedingly variable, being recorded
m. as 120, and found at 9 a.m. to be 95. This was
dly noticed.
ere had been no complications.
the day before he sat up he complained of soreness
pains in his left arm and about his shoulder. On the
following his first attempt at walking, he complained
very painful cramps in the calves of both legs. On
following day
ame complaints of
left calf only,
he left leg marked
comparative
ments at the knee

less in a profoundly dull, somnolent condition, approaching coma. He could with difficulty be aroused to answer questions, which he did in monosyllables only. He constantly kept his arm or the bed clothes over his eyes. On inquiry he complained of most severe headache, especially over and behind his eyes, and at times in the eyeball. On allowing any light to fall on his eyes he complained of severe pain. He also complained of pain in the muscles at the back of the neck; there was marked rigidity there and the head was slightly retracted to the right.

Slight pain about the abdomen was complained of. The slightest touch on any part of the trunk or extremities threw the whole body into sudden painful tonic spasm. There was more marked hyperæsthesia about the splenic region and about the inferior angle of the left scapula, though the points of more marked hyperæsthesia changed about completely from time to time, at times being over the right half of the abdomen. This was much less marked on deep pressure than on superficial palpation. There appeared to be slight tenderness on deep pressure in the right iliac fossa.

There was no abdominal distension and no eruption.

The pupils were normal.

Temperature was 104° ; pulse, 100 ; respiration, 24.

He was given quinine gr. ii every four hours, milk diet, and a cold Leiter's coil was applied to his head.

For the next two days slight diminution in the headache, dull mental condition, and hyperæsthesia were the only changes.

On the next, or the seventh day of disease, he was considerably brighter, and the hyperæsthesia was at times only slight, at other times as marked as ever.

On the next day, or precisely the 8th day of disease, a large crop of typical typhoid papules appeared on the abdomen, axilla and chest. These kept coming out for six or seven days, and each papule was observed from two to four days. Urine was 1030 ac. high colour, no albumen nor

sugar and cold nitric acid brought out a crystalline layer of nitrate of urea. The temperature on these days only varied one degree in the twenty-four hours, averaging 103°. The stools were slightly formed, greenish and very offensive. The spleen was considerably enlarged on percussion, palpation being unsatisfactory.

Cold baths at a temperature of 70°-65° were now given every three hours, when the temperature was above 102⅖° F. For the next thirteen days, the temperature was intermittent, reaching about 103° at night and 100 in the morning. Temperature as well as the pulse and respiration rates were lowered markedly by each bath.

There was occasional slight abdominal distension with wandering pains in the abdomen.

The bowels moved naturally throughout, the stools becoming liquid, yellow, very offensive, without showing any milk curds.

Only six baths were given.

After a fastigium of twenty days, the temperature fell gradually by most regular steps through nine days, after which it remained normal or slightly sub-normal.

On the tenth day of normal temperature he was given chicken and soft food, and when two weeks of normal temperature was reached, he was allowed to sit up for a few minutes. A plain, soft, systolic murmer heard at the apex of the heart during ten days of his fever, was now quite absent. The pulse was exceedingly variable, being recorded at 8 a.m. as 120, and found at 9 a.m. to be 95. This was repeatedly noticed.

There had been no complications.

On the day before he sat up he complained of soreness and pains in his left arm and about his shoulder. On the day following his first attempt at walking, he complained of very painful cramps in the calves of both legs. On the following day there were the same complaints of the left calf only, and there was in the left leg marked comparative weakness of all the movements at the knee

and ankle, with a suspicion of diminished sensation over the calf and most extreme muscular tenderness of the calf, simulating the earlier hyperæsthesia. The left patellar reflex was increased. He was given Fuller's lotion locally and salicylate of soda gr. xx. t.i.d. internally. The condition improved markedly daily, and he was discharged on the sixth day of this complaint, well and walking normally, being ordered an iron tonic. His field of vision was tested and no scotoma made out. 35. lbs. weight was lost in his fever.

Reviews and Notices of Books.

Dictionary of Medicine; Including General Pathology, General Therapeutics, Hygiene and the Diseases of Women and Children. By various writers. Edited by RICHARD QUAIN, Bart., M.D., LL.D., F.R.S., President of the General Council of Medical Education, &c., assisted by F. T. ROBERTS. M.D., Physician and Professor of Clinical Medicine, University College, &c., and J. MITCHELL BRUCE, M.A., M.D., Physician and Lecturer on the Principles and Practice of Medicine, Charing Cross Hospital, &c., with an American appendix, by S. T. ARMSTRONG, M.D., Ph D., Visiting Physician to the Harlem Hospital, New York. New edition. Revised throughout and enlarged. Two volumes. New York: D. Appleton & Co. 1894.

It is impossible in the space at our disposal to give anything like an accurate idea of the extent and range of the subjects dealt with in these two large volumes. As compared with the first edition, there is a marked improvement in the fullness with which the various subjects are considered While the first edition, published in 1882, contained about 1,800 pages. the present one contains 2,500 pages. The illustrations, which are fairly good, have been also increased considerably.

The success attending the sale of the first edition has been very marked, no fewer than 33,000 copies being sold in England and America. This fact alone is sufficient proof that the work is one that is highly appreciated by the profession. There can be but little doubt, we think, that the present edition will be received as favourably as its predecessor. This success is, we believe, mainly attributable to the fact that there are few subjects in the realm of practical medicine that are not dealt with, so that the busy practitioner seldom fails to find what he wants when he consults its pages.

Works of this character necessarily take a long time in preparation, and it not infrequently happens in consequence that months, and sometimes years, elapse between the pre-

paration of an article and its appearance in print, the matter becoming in the meantime stale. The editors have taken pains to lessen this objection by a late revision and the addition of an appendix which contains new matter appearing subsequent to the preparation of the various articles.

In many instances the writers of the articles in the present are the same as those of the earlier edition, but in several cases, on account of the hand of death, new writers had to undertake the task of revision and addition. Among the more prominent writers of the first edition who have laid down their pens forever are Charles Murchison, Edmund Parkes, Lockhart Clarke, George Callender, Tilbury Fox and and several others.

Of necessity the various articles, where the contributors are so numerous, differ much in completeness and value. It would be easy to mention a few articles in these volumes that have not been dealt with in an altogether satisfactory manner; but the proportion of such is so small as compared with the large number where the writer has given everything of value, that it would serve no useful purpose to mention the former in detail.

The articles on the central nervous system have been for the most part contributed by Gowers and Bastian. These names are a sufficient guarantee of the work in this important department. A special article is contributed by Greenfield and Muir, of Edinburgh, on Micro-organisms. This will be found to be of value to those who have no special work on the subject.

The work on the whole will be found to be of great value as a work of reference for the busy practitioner.

It is issued by the American publishers in two large well printed and bound volumes.

Diseases of the Ear. A Text-book for Practitioners and Students of Medicine. By EDWARD BRADFORD DENCH, Ph.B., M.D., Professor of Diseases of the Ear in Bellevue Medical College, &c., &c. Eight coloured plates and one hundred and fifty two illustrations in the text. New York: D. Appleton & Co. 1894.

Dr. Dench has brought out a very elaborate work on the ear, vieing in size and detail with the extensive works of Gruber and Politzer.

One cannot help but think that the supply of works in this special line must surely be in excess of the demand.

As for Dr. Dench's book we can hardly find anything to say but praise of it.

It evinces hard, thorough thought and work, and is in every particular brought up to date as to treatment, diagnosis, &c., &c.

The first seventy odd pages are devoted to the anatomy and physiology of the ear, and here the excellence of both the letter press and the diagrams shine. Many of the latter are original, and those depicting the circulation in this region are very clear and useful.

In the pathological portion of the work we must take exception to the statement that true diphtheritic otitis externa is more common than croupous inflammation of the same district.

In the middle ear inflammations in addition to the ordinary purulent otitis media, the author names as a distinct disease (otitis media purulenta residua) being the after results of the ordinary purulent otitis media, where the discharge has ceased, and the physician is called on to treat the adhesions or other changes remaining.

We doubt if this is necessary, as the already profuse nomenclature of aural diseases is surely sufficient, and the grouping of these sequelæ in a separate category will not add to clearness.

But the admirable part of this really good work is the portion devoted to the dependence of aural affections on constitutional states, infectious diseases, and on diseases of the general nervous system.

This important subject is handled ably and at considerable length, which is notable, mainly, by its absence in other textbooks.

The work is well gotten up, printed and illustrated, and, even at the risk of being considered irreverent, we would place the book as a treatise on the same level, if not superior in some ways to the great works of the masters, Politzer and Gruber.

Mental Development in the Child and the Race. By J. MARK BALDWIN, M.A., Ph.D., Professor of Psychology in Princeton University. New York and London: MacMillan & Co. 1895. Price, $2.60.

The author of this work belongs to that young and vigorous school of psychologists which hopes for much outside of pure mental analysis. Professor Baldwin seems to perceive clearly that the investigation of the origin or genesis of mental states, like the study of embryology, must throw much light on the adult or mature condition, hence the author of this book has been for years among the most persistent and successful students of infant psychology.

The work in question is written under the guiding principle of development and evolution, though he has tackled the problems presented by a method different from that of Spencer and Romanes, and one which is more likely to appeal to the medical man at all events. The headings of some of the chapters of the work may suffice to indicate its scope and character; Infant and Race Psychology; A New Method of Child Study; Distance and Colour Perception of Infants; The Origin of Right-handedness; Infant's Movements; Suggestion; Theory of Development; The Origin of Motor Attitudes and Expressions; Organic Irritation; Conscious Irritation, etc. These topics are all interesting to medical men with a philosophic tendency—in other words, to the highest class in our profession. The physician is as constantly brought into contact with the mind as with the body, though he does not always consciously recognize the fact. We bespeak a recognition of this book by medical men as well as psychologists and teachers. W.M.

Physiology for Beginners. By M. FOSTER, Professor of Physiology in the University of Cambridge, and LEWIS E. SHORE, Senior Demonstrator of Physiology in the same University. London and New York: MacMillan & Co. Toronto: Copp, Clarke & Co. 1894.

We are told in the preface that "This little work is intended for those who, without any previous knowledge of the subject, desire to begin the serious study of Physiology" . . and the hope is expressed that it "may serve as an introduc-

tion" to Professor Huxley's *Elementary Lessons*. The latter work has served an excellent purpose, but the book before us will, in most cases, replace it now, as it is altogether better up to date, and, upon the whole, a much truer representation of the physiology of to-day. We regret that it is not a little larger, more in fact in this respect like Huxley's work. We do not think it is likely to be used as an introduction to Huxley's well-known "Lessons," though such a work was very much needed in every medical school as an introduction to physiology, as the majority of students take up the subject in the first year without previous knowledge of anatomy, physics or chemistry, and must needs be at a great disadvantage at the best, and especially so in attempting to use a large text-book. The names of the authors is a guarantee of the character of the work, but on its merits it deserves to be largely used. W.M.

The Anatomy of the Nasal Cavity and its Accessory Sinuses, an atlas for practitioners and students. By A. ONODI, M.D., Lecturer on Rhino-Laryngology in the University of Buda Pesth. Translated from the second edition by St. Clair Thomson, M.D., Lond., F.R.C.S., Eng., Member Royal College of Physicians. London: H. K. Lewis, 136 Gower street. 1895.

It is almost superfluous in one sense to review a work like Dr. Onodi's.

It supplies a long felt want, and will be a great aid to specialists, general practitioners or students in making clear at a glance the anatomy of this region.

The plates are beautifully clear and accurate, being reproduction of photographs taken of sections.

The English-speaking medical profession owe a debt of gratitude to Dr. St. Clair Thomson for putting this work before them.

As to the printers' work and engravers' it is in the highest style, the book having rather the character of an edition de luxe.

On Preservation of Health in India. By Sir J. FAYRER, K.C.S.I., M.D., F.R.S., President of Medical Board at the India Office. Pp. 51. McMillan & Co., London; The Clark Co., Toronto.

In the preface we are told that "The following pages contain the substance of a lecture delivered to the students of the

Cooper Hill College, as a guide towards the preservation of health in India."

The author commences with a short sketch of the physical character of India and its climate. He then enters upon the consideration of how to preserve the health, and what means are best to avoid the various diseases.

We strongly recommend anyone contemplating a trip to India to carefully read this little volume.

The Aseptic Treatment of Wounds. By Dr. C. Schimmelbush, Privat-docet and assistant surgeon in Prof. Von Bergmann's University Clinic at Berlin, with a preface by Prof. Bergmann. Translated from second German edition by Alf. Theodore Rake, M.B., B.S. (Lon.), F.R.C.S.; pp. 250. London: H. K. Lewis. 1895.

This is a most complete text-book on the aseptic treatment of wounds. The name of the author is a sufficient guarantee of the excellence of the work without any commendation on our part. The whole subject is gone into in the most thorough manner. The fallacy of the old theory of infection by air is shown, and then the real causes of infection are pointed out. Explicit directions are given for sterilizing and preparing everything required for an operation.

The work should be in the hands of all who intend doing even the smallest surgical operation, for it is the best work we have on this most important subject.

The print is good and the style of the translator is easy and readable, and much pleasure as well as profit may be obtained from its perusal.

Chemistry: General, Medical and Pharmaceutical, including the chemistry of the United States Pharmacopia. A manual on the General Principles of the Science and their applications in Medicine and Pharmacy. By JOHN ATTFIELD, F.R.S., Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain. Fourteenth edition. Philadelphia: Lea Brothers & Co. 1894.

This favourite work has reached its fourteenth edition. This is in itself a sufficient proof of its value. In the present edition all important advances have been incorporated to bring the work up to the present knowledge of the subjects of which it treats.

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[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL.]

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(2.) Some of the effects of sunlight on tetanus cultures—F. F. Wesbrook, Winnipeg.

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(4.) Certain forms of peripheral lesions in infantile paralysis—A. Primrose, Toronto, p. 87.

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A travers les hôpitaux de Paris—Jules Jehin Prume, p. 57.

Le traitement des maladies des trompes de Fallope et des ovaries—A. Lapthorn-Smith, p. 59.

THE CANADA MEDICAL RECORD.

Recent electro-therapeusis of goitre, with improvements in apparatus—C. R. Dickson, Toronto, p. 97.

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DOMINION MEDICAL JOURNAL.

Clinical notes of a case of cancer of the œsophagus J. J. Cassidy, Toronto, p. 61.

Facts attesting the therapeutic value of antidiphtheritic serum in the treatment of diphtheria—Charles Forbes, London, England, p. 63.

THE CANADA LANCET.

The treatment of strangulated hernia—J. Wishart, London, Ont., p. 197.

Stomatitis Neurotica Chronica—J. Jacobi, New York, p. 202.

L'UNION MÉDICALE DU CANADA.

Diagnostic et traitement bactériologique de la diphtérie—Emmanuel P. Benoit, Montreal, p. 113.

De l'angine Diphtéritique toxique—Jules Jehin Prume (suite), p. 123.

MONOGRAPHS.

(8.) Trembling Mountain (Laurentides, Canada), a high-level sanitarium for the treatment of tuberculosis—Dr. Camille Laviolette, Montreal.

(1,) It will be remembered that some few months ago Dr. Klein, of London, in criticising Haffkine's method of vaccination against cholera, made the interesting discovery that inoculations of animals with small doses of cultures of pathogenic bacteria, such as the bacillus of enteric fever and the B. coli communis, the Micro-bacillus prodigiosus and the B. proteus, confers upon them an immunity against the the bacillus of cholera. These results have been confirmed by Sobernheim in Germany, and by Kanthack in England. Wesbrook has now in Professor Fraenkel's laboratory at Marburg made further observations upon this subject. He finds there is a marked difference in the immunity from cholera conferred by inoculation of the products of the cholera spirillum and that conferred by the B. coli and the M. prodigiosus. These last only confer a protection of short duration, not exceeding eleven days (in guinea pigs), the first a much more durable protection ; or, to put it in other words, the immunity conferred by cholera against cholera, by prodigiosus against prodigiosus is of a higher quality than that conferred by prodigiosus against cholera and *vice versa*. Klein's contention against Haffkine's

method of inoculating individuals against cholera with the products of cholera cultures is thus considerably weakened.

(2.) The powerful effects of sunlight as a germicidal agent has been known to us since 1877, when Downes and Blunt published their valuable paper in the Proceedings of the Royal Society. Of late the subject has been taken up actively by many workers, notably by Roux, Marshall, Ward and Buchner. Scientific research has amply proved the truth of this popular opinion that sunlight and fresh air are enemies of disease.

How this is brought about in a matter of considerable interest. Light and air acting together will, in a short time, destroy the poison of tetanus. But as the bacillus of tetanus is an anærobic microbe, it is important to know whether in the absence of air the same destructive action is manifest—to know, that is, whether reduction processes and the using up of oxygen are the essential causes of this bactericidal process.

Dr. Wesbrook's paper contains a series of observations upon this point. He finds that oxygen is a necessary factor in the destruction of bacteria by light, and by ingenious experiments shows that there is an actual diminution of the air during the process. In the absence of oxygen the sun is powerless to produce any harmful effect on the bacteria exposed to it.

These results confirm strongly the conclusions arrived at by Downes and Blunt, Duclaux and Roux.

It is interesting to note that Dr. Wesbrook came across a suggestive example of the survival of the fittest. Such spores of tetanus bacilli, as in certain cases, survived the action of combined light and air, gave cultures possessing increased virulence. It is not that during this process the spores gain in virulence, but, we would suggest, that virulence and vitality go in this case hand in hand and the destruction of the weaker brethren gives the stronger opportunity to exert full action.

(3.) In this article, which gives the result of a study of two cases made in the laboratory of Professor Chiari at

Prague, Dr. Martin calls the attention of English speaking medical men, for the first time, to the occurrence of this rare condition. He gives a clear account of the localities and characters of the actinomycotic lesions in the brain, and discusses the relationship of cerebral actinomycosis to that of the lungs and other organs.

(4.) These notes are upon two cases. The remarks on the first case are confined wholly to certain gross manifestations in infantile paralysis observed in a dissection made of a leg of a boy, aged 13, amputated at the knee-joint, the muscular control having been completely lost. The conditions observed were those of extreme atrophy of the muscles, vessels and nerves, but a feature of special notice was the abundance of subcutaneous fat, while there was little or no fat in the substance of the muscles themselves. By actual measurement, the total thickness of the limb was made up of muscle and bone 1½ inches, with skin and cutaneous fat 1 inch. This condition of the subcutaneous fat in infantile paralysis opens up an interesting question as to the primary lesion in the anterior horns of grey matter in the spinal cord, and the effect of their involvement on the trophic nerves distributed to the subcutaneous fat. The author quotes Gowers who, in speaking of vaso-motor and trophic disturbance in the spinal cord, and more particularly of the changes in the nutrition consequent upon such conditions, remarks that "the changes in the nutrition of the skin, if slight and chronic, resemble those produced by disease of the nerves, and suggest disease of the *posterior* roots." In thus relegating the trophic nerves for the skin to the posterior roots, it would seem reasonable to suppose that in *anterior* poliomyelitis, the skin and probably subcutaneous tissue would escape, and would not take part in the atrophy affecting the muscles. The case presented proves that the usually accepted statements concerning the condition of the subcutaneous fat in infantile paralysis are not universally true, and the author believes that further investigation will show that it does not undergo atrophy in such cases.

The second case was one of hemiatrophy of the tongue in a boy of nine years of age. The lesion was apparently of central origin.

(5.) The case reported was that of an English woman aged 27, in her third confinement, the first and second delivery having been by embryotomy. The measurements with the pelvimeter indicated an antero-posterior diameter of $2\frac{5}{8}$ inches and an oblique $4\frac{1}{2}$ inches. Symphysiotomy was performed in the usual way on October 9, 1894. The measurements of the fœtal head were, occipital frontal $4\frac{1}{2}$ inches, bi-parietal $3\frac{1}{8}$ inches, weight of child 8 pounds. The mother made an uneventful recovery. At the end of the third week a plaster of Paris bandage was applied about the pelvis, extending from the great trochanter to an inch or so above the brim of the pelvis. Two days later the patient left the hospital well and strong, accompanied by a healthy boy.

(6.) During the past month the usual amount of writing on the diphtheria antitoxin has appeared. Two papers may be noted, the one by Dr. Barker (of Johns Hopkins Hospital and a graduate of Toronto), is a concise but complete history of the investigations leading up to this method of treatment, as well as the manner in which the serum is prepared. The other (7) while giving a history of the treatment, appears to have been written in the interests of a large English firm of manufacturing chemists, and as such seems to be out of place as an original article in a Canadian medical journal.

(8.) In a short brochure on the treatment of pulmonary tuberculosis by mountain air, Dr. Laviolette states that it is his intention to open a Sanitarium on the slope of the Trembling Mountain. Having examined all the high lands in the vicinity of Montreal, he finally chose this spot, of which the late Father Labelle said that it was where he intended to end his days when he retired from the turmoil of public life. The Trembling Mountain is the highest point of the Laurentian range, having an elevation of 4,000 feet above

the level of the St. Lawrence River, and is well supplied with running water. It is four miles from the village of St. Jovite, a station on a branch of the C P.R., and 84 miles north-west from Montreal. The plateau, on the side of the mountain, chosen for the site of the Sanitarium slopes from N.W. to S.E., and from it the scenery rivals that of Switzerland for grandeur and picturesqueness. At the foot of the mountain is the Trembling Lake, which is nine miles long and one and a half wide. The spot is in the centre of the "Trembling Mountain Park," a national park of 14,750 acres, recently set apart by the Government. The corporate body of the Sanitarium and the inmates will have the freedom of this princely domain, with its unrivalled opportunities for the hunter, the angler, the artist and the scientist to exercise their skill.

Dr. Laviolette deserves every encouragement in his undertaking, for with such splendid resources Canada has been too long without an institution of this kind, our invalids have been too long compelled to go away from home to seek for health among people alien in language and customs. The success of the sanitaria of Canigon in France, of Davos in Switzerland and of Saranac in the United States is now beyond question, and it only remains with the corporation of the Trembling Mountain Sanitarium, by judicious management, to make this Canadian health resort of lasting benefit to our sufferers, and to rival in popularity those already established.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Large Interstitial Uterine Tumour—Dr. Wm. Gardner.
Cholecystenterostomy with the Murphy Button—Dr. Shepherd.
Four Cases of Extra-Uterine Pregnancy—Dr. J. A. Springle.
Uterine Fibroid and Dermoid Cyst—Dr. A. L. Smith.
Foreign Body in the Bladder—Dr. Hingston.
The Late Dr. E. E. Duquet.
Perforated Gastric Ulcer—Dr. Kirkpatrick.
Gall Stones—Dr. Armstrong.
Multiple Carcinomatous Growths in a Cirrhosed Liver—Drs. Finley and Adami.
On Two Different Conditions of the Mitral Valve Giving Rise to Presystolic Murmur—Dr. Adami.
Syphilitic Nephritis—Dr. Lafleur.

Stated Meeting, January 25th, 1895.

DR. G. P. GIRDWOOD, PRESIDENT, IN THE CHAIR.

Large Interstitial Uterine Tumour with Great Development of the Uterine Wall and Moderate Increase of the Uterine Cavity.

Dr. WM. GARDNER contributed this specimen and said that it appeared to belong to the variety of myoma, designated as lymphangiectodes; and, roughly speaking, was composed of intersecting bands or filaments of pearly white tissue bounding spaces containing a clear straw-coloured fluid.

The case was interesting from its rarity, its rapid growth, its consistence as felt through the abdominal wall, and otherwise in some respects presenting difficulties in diagnosis. The patient was aged thirty-two, and married eight years, sterile, menstruation regular till three or four months ago, the flow being copious and painful. Otherwise her complaints were of pain in the left lumbar region and in the legs, and of abdominal enlargement. The patient said that previous to a year ago there was scarcely any enlargement. The abdominal tumour resembled much in

feel and in other characters the gravid uterus of seven months, presenting at intervals the painless contractions so valuable a sign of pregnancy, as insisted upon by Dr. Braxton Hicks. The fact, however, that this sign is occasionally met with in the softer varieties of uterine tumours, was demonstrated by the late Dr. Matthews Duncan. This consistence of the tumour and marked purplish discolouration of the genitals, with pigmentation of the linea alba, and areola about the nipples, had given rise to the suspicion of pregnancy ; a suspicion which was shared by a member of the profession. The operation was done a fortnight ago and the method chosen was supravaginal amputation after ligature of the ovarian and uterine arteries, and intra-peritoneal treatment of the stump. The recovery had been absolutely without unfavourable symptoms.

Cholecystenterostomy from the Use of Murphy's Button.

Dr. Shepherd, at a meeting held September 21st, 1894, reported a case of cholecystomy in which a fistula remained, and he stated then his intention of doing a cholecystenterostomy should the fistula not close within three months. She returned to the hospital November 28th, 1894, looking well and healthy, and having gained considerably in weight. She, however, said the continued discharge of the bile was unbearable, and asked that an operation be performed for relief. So, on December 3rd, she was placed under ether and an incision was made a little internal to the first one, and the fistulous opening thus avoided. The gall-bladder was seen attached firmly to the abdominal wall. On examining the site of the supposed gall-stones found at the last operation in August, he came down on a large mass, the size of an orange, which apparently involved the head of the pancreas and duodenum. Being convinced that the case was one of malignant disease, and that all measures for relief could only be temporary, it was decided to unite the gall-bladder to the colon by means of a Murphy button, the duodenum being fixed and

not easy to get at. The button was introduced without much difficulty, the purse string suture being first applied: owing to the thickness of the gall-bladder, there was some puckering and it was difficult to get the folds to lie flat. The thinness of the colon was remarked, and the button when pressed home could be seen distinctly through the walls of the gut, so a few Lembert's sutures were introduced. As the patient had malignant disease, it was not considered very important to close the fistulous opening, as it was felt that this would gradually diminish in size when there was free communication between the gall-bladder and the gut. On dropping back the bowel and gall-bladder the parts seemed to lie quite comfortably without tension. The abdominal wound was now closed with two layers of sutures.

The patient went on excellently well for three days, very comfortable, with no pain and no discharge of bile from the fistulous opening. On the evening of December 6th, she complained of chilliness, and bright red blood began to ooze through the fistulous opening which led to the gall-bladder, and large clots of blood could be squeezed out. The bladder was packed with iodoform gauze, but in a few hours the blood began to force its way through the abdominal wound, and the pulse began to fail, so it was decided to reopen the wound and examine the source of the hæmorrhage. On opening that, however, the parts were free from any peritonitis or sepsis, but there was a considerable amount of clotted blood in the abdominal cavity in the neighbourhood of the stomach, besides a quantity in the gall-bladder. On examining the anastomosis, it was seen that the button had cut through the gall-bladder, and from this cut there was free bleeding. There was no gangrene of parts in contact with the button. The button was immediately removed and the wound in the colon and that of the gall-bladder sewed up. In the latter, owing to its great friability, this was a difficult matter. Blood still came and so the gall-bladder was packed with

iodoform gauze and the wound closed as the patient was getting much weaker. Next morning the dressings were found to be soaked with blood, and all efforts to stop it failed. She died that evening. A hurried examination was made after death and carcinoma of the head of the pancreas and duodenum was found, which pressed the common duct. The gall-bladder was full of blood, the suturing having failed to arrest the hæmorrhage. Dr. Shepherd remarked that such cases as this rather damped one's enthusiasm for Murphy's button, but still the case was one of cancerous disease, and such cases were more liable to hæmorrhage than others.

Dr. JAMES BELL had listened with great interest to the result of this operation. He never had occasion to apply the Murphy button in the operation of lateral anastomosis in the human subject, although he had done so experimentally in the dog. However, he had often thought that a cholecystenterostomy, especially uniting the gall-bladder to the first portion of the duodenum, must be a good deal more difficult operation to perform than it is described as being. The difficulty of suturing the gall-bladder was in his mind while Dr. Shepherd was describing his case. Since his three cases, reported a few weeks ago, he had performed another end to end anastomosis with every prospect of a satisfactory result so far. There was a very chronic obstruction, the ileum was much dilated, the muscular coat of the walls greatly hypertrophied, being perhaps 2½ inches in diameter at the point of section. On the other hand the distal portion was perhaps smaller than usual. In puckering up the purse-string suture over the end of the proximal portion of the bowel, which was also greatly thickened, he found difficulty in getting the edges evenly turned in, and after uniting the button, he noticed some mucous membrane protruding. He then cut the string, unscrewed the button, made another section, and applied the button a second time with better success. The question of hæmorrhage in Dr. Shepherd's case was a little

difficult to understand. There were no large vessels to bleed in the substance of the gall-bladder itself, as it is not a vascular structure under ordinary circumstances. His first impression, upon hearing of the hæmorrhage, was that it came from some portion of the meso-colon. It was certainly difficult to understand what combination of circumstances could make the gall-bladder bleed so profusely. He could well understand that an experience of this kind would not predispose a man to repeated operations with the Murphy button. He thought that it had been used oftener than advisable in cholecystenterostomy. The plea is, that in a certain percentage of these cases, a fistula remains permanently. On the other hand he believed opening the duodenum to be a great element of danger. Then the history of the earlier cases, those done before the Murphy button was introduced, of establishing a communication between the gall-bladder and some portion of the intestines, was a very unfortunate history all through. Many cases of inter-communication of the contents occurred, setting up disastrous, if not fatal results.

Four Cases of Extra-Uterine Pregnancy.

Dr, SPRINGLE read this paper, which will be found at page 661 of the March number.

Dr. HINGSTON said that some years ago Dr. D'Orsonnens, a very distinguished accoucheur in Montreal, mentioned a number of cases in which no operation was performed, and where the patients ultimately made good recoveries. He (Dr. H.) saw two of the cases to which Dr. D'Orsonnens alluded, where the fœtus came away, piecemeal, through the abdominal wall in one case, and through the rectum in the other. Dr. D'Orsonnens' experience in the Maternity and in private practice went to prove that in extra-uterine pregnancy rupture did not necessarily follow, and that when rupture occurred, death did not necessarily take place. Sometimes nature was sufficient to bring the child into the world. He (Dr. H.) had an instance of this four years ago. He was asked by a medical gentleman of this

city to see a lady for the purpose of removing what was considered an ovarian tumour. He saw the lady, examined her carefully, found the uterus perfectly free ; depth of cavity normal, yet was there a large swelling, more to the right side than to the left, and on close examination he came to the conclusion it was not a tumour, but partly interstitial, partly tubal pregnancy. He advised the operation to be put off till the seventh month. The lady was again seen at the seventh month, and being in excellent health, the operation was deferred till the eighth month. About the time when the operation was to take place, being in the neighbourhood, he called on the lady, and while talking to her something like labor pains came on. On examination he found the os uteri dilated, and the membranes projecting from the side of and into the uterus. He suggested that an accoucheur be sent for and left. He learned afterwards that the child was born without difficulty in the natural way. Both parent and child were alive to-day. He merely mentioned this case to show that, in some instances, exceptional no doubt, interference was not necessary, and that especially when fœtation was partly interstitial and partly tubal. Dame Nature may, and does, sometimes, dispense with our art.

Uterine Fibroid.

Dr. LAPTHORN SMITH exhibited a fibroid uterus which he had removed fifteen days previously from a German woman at the Samaritan hospital. The patient was thirty-five years of age, but looked much older, and was very anæmic from menorrhagia, the flow being very profuse and lasting fifteen days. Although this had been going on for five years, it was only during the last three years that she had noticed the tumour which, when she came under observation, made her appear the size of a woman seven months pregnant. The method employed was that followed by Bantock and Price and Tait, by serre-nœud and the extra-peritoneal treatment of the stump. The tumour weighed, when fresh, about fifteen pounds, was symmetrically oval,

smooth and dense, and had two small subperitoneal fibroids on top of it between the ovaries, which latter were large. The serre-nœud had been removed on the 6th day, and the stump cut away on the 12th day. The patient was eating well, and pulse and temperature had hardly gone above normal, 100½ for one night only. She was now sitting up a little every day. While admitting the many advantages of the new method by which no stump at all is left, he felt safer with the extra-peritoneal method and still employed it whenever he was particularly anxious for the patient to recover, or in other words, in every case.

Dr. HINGSTON thought there were some cases where the operation must necessarily be intra-peritoneal, and when it could be performed it was also the better; but there were cases where the extra-peritoneal was the better operation. He had operated by both methods, and while he gave the preference to the intra-peritoneal method, he found that each had advantages in certain cases. Much depended upon the length of the cervix, the nature of the tumour, and the facility or otherwise, with which the stump could be drawn through the abdominal wound.

Dermoid Cyst.

Dr. LAPTHORN SMITH exhibited a dermoid cyst of the right ovary, which he removed a week before at his private hospital, from a lady, fifty-six years of age, who was suffering great pain, as well as from profuse menstruation. On examination, the uterus was found to be enlarged, there being several small fibroids in its anterior wall, and the cervix was badly lacerated, while a solid tumour, the size of a small orange, occupied Douglas cul-de-sac. She was very weak from these hæmorrhages, which began ten years before and had gradually increased. The periods, however, had never ceased at the usual age for the menopause. The uterus was curetted, the cervix repaired, and the dermoid cyst and the other ovary removed. She suffered so little pain that she did not even require the hypodermic injection of a ¼ grain of morphia, which he

always allowed, while she declared herself to be absolutely free from pain the day following the operation. The object of removing both ovaries was to put a stop to the menorrhagia. On cutting open the cyst it was seen to contain an outside layer of pure white sebaceous matter around a central ball of hair; but it contained no teeth. The operation presented no difficulties, and illustrated the importance of recognizing and removing the tumours while they were yet small.

Foreign Body in the Bladder.

Dr. HINGSTON exhibited a wax candle which he had removed from the bladder of a lady who had been using it for purposes of sensual gratification. On the last occasion, which to her would be a memorable one, it slipped from her finger and was seen no more. She suffered intense pain in consequence, and finally was compelled to seek surgical aid. After successively examining the vagina and rectum and bladder, Dr. Hingston located the foreign body completely within the latter organ (the patient only knew it had gone "somewhere down there"). He removed portions of it with bullet forceps, but owing to the softness of the wax those portions were inconsiderable. He therefore ordered the patient to the hospital, where, after chloroform had been administered, he succeeded in removing the whole of the candle, the longest piece measuring five and a half inches in length, the last and largest piece having been removed with a lithotomy forceps, such as is used for children. The most interesting feature in the case was Dr. Hingston remarked, the facility with which he could manipulate his finger, and an instrument upon it, through the urethra. It probably did not take more than ten or twelve minutes for him to gain an entrance to the bladder with the lithotomy forceps and the finger to guide it. There was very little suffering experienced afterwards from the operation, and no incontinence of urine resulted from it.

Dr. F. W. CAMPBELL mentioned several somewhat similar

cases which had occurred in the practice of the late Prof. Syme, during his attendance at the Royal Infirmary, Edinburgh. He also described a case which he had seen at the Montreal General Hospital, where the late Dr. Thomas Walter Jones, removed from the urethra, by perineal section, a carpenter's lead pencil. One case which occurred in his own practice some years ago, was that of a young man who came to his office and said that he had been waylaid and two large pins pushed into his urethra—the heads downwards. It was impossible to remove them *via* meatus, so the points were pushed through the sides of the penis and a small incision made to liberate the heads. The present case was the first the speaker had heard of where the female urethra was used for such a purpose, although those in which the vagina was used were not very rare.

The Late Dr. E. E. Duquet.

The following resolution was moved by Dr. HINGSTON and seconded by Dr. BURGESS,

"That this Society desires to record its sense of the loss sustained by the profession generally, and mental science more especially, by the recent death of Dr. Duquet, who, in a quiet and unobtrusive manner, had secured the respect and confidence of his professional brethren in Montreal, and the esteem and consideration of the more eminent alienists elsewhere."

Stated Meeting, February 8th, 1895.

DR. G. P. GIRDWOOD, PRESIDENT, IN THE CHAIR.

Perforated Gastric Ulcer.

Dr. KIRKPATRICK brought before the Society a patient on whom he had operated for this cause. (See page 670 of the March number.)

Dr. ARMSTRONG congratulated Dr. Kirkpatrick, and thought it was a credit to the Society for one of its members to have recognized this condition and performed the operation. He believed that this promised to be a field in which a great deal of useful surgery might be done; and

physicians should be stimulated to the early recognition of such cases. Although ulcers were more common on the posterior wall, rupture or perforation was more apt to occur on the anterior, which was fortunate, as of course it was more easy to reach the anterior wall of the stomach.

Dr. GURD said that he had been attending the girl for about a week before sending her to hospital. She had been suffering from the usual symptoms of anæmia with gastralgia. The pains in the stomach came on periodically about four or five o'clock every afternoon, and appeared to shoot up to the upper part of the chest. She was able to attend to her duties those of housemaid, when suddenly in the night she was seized with severe pains in the epigastrium. Dr. Gurd was asked by her employer for something to relieve her. He sent a $\frac{1}{4}$ grain of morphia. The next day he found the pain not very great, but much increased on pressure, temperature about 101°. The following day all the symptoms were rather worse, and an attempt to get her into the hospital was made, but without success. Two days went by before she could be admitted, during which time she had been growing worse, so much so that few who saw her before the operation thought she could recover.

Dr. ENGLAND said this case recalled to his mind a case reported by Dr. Armstrong, about 3 years ago, to whom he administered the ether. The case was that of a young lady, 22 years old, who was suddenly seized, while at a social party, with severe abdominal pain. Her previous health had been fairly good, though she had at times been troubled with indigestion, and was rather anæmic. The pains continued in spite of treatment by the local physician, and peritonitis developed. Seven or eight days after the onset of pain, Dr. Armstrong saw the case and recommended operation. Laparotomy was performed, the incision was made in the middle line below the umbilicus. General peritonitis was found to exist. The appendix vermiformis was located and removed, also the uterine appendages, the latter not being healthy and the wound closed. The patient

died, he believed, on the following day, and the autopsy revealed two large ulcers which had perforated the walls of the stomach, the perforation probably having occurred at the onset of pain, allowing the contents of the stomach to escape into the peritoneal cavity. On opening the abdomen it was found that firm adhesions had formed at about the level of the umbilicus, dividing the abdominal cavity into two zones. Into the upper the contents of the stomach continued to escape from the time of perforation until death. The lower zone showed signs of more recent and severe inflammation. His object in alluding to this case was to show that peritonitis, following perforation of a gastric ulcer, was not so virulent in character as was peritonitis from perforation of an inflamed appendix or other intestinal ulcer. Peritonitis in both these cases was slow in its development and of a subacute character; so different from the peritonitis which one expects to find when the bowel is ruptured or a pus tube breaks, and its contents escape into the peritoneum.

Dr. ARMSTRONG remembered the case referred to by Dr. England, and it was owing to that and one or two similar experiences that he acquired sufficient knowledge to recognize the condition and its seriousness in Dr. Kirkpatrick's case. In this way even our mistakes prove beneficial to mankind. He thought that it was these cases without any distinct history which were apt to rupture. The girl alluded to by Dr. England had been dancing when the rupture occurred.

Gall Stones.

Dr. ARMSTRONG showed two lots of gall-stones. The first bottle passed around contained, according to a count made by one of the students, 637 stones. This was a large number, but of course much larger numbers had been removed. The chief interest of the case was in the clinical history.

Patient a female, æt 64, was admitted to the Montreal General Hospital complaining of pain in the right hypo-

chondrium. The pain was so severe that morphia was given hypodermically to relieve it. She had had a little jaundice, lasting a short time, some three months before admission. The patient had the appearance of a woman suffering from malignant disease. She was pale and cachectic.

The operation was begun as an exploratory incision, with the idea of removing gall stones if they were found, and if malignant disease, the patient would be none the worse.

On opening the abdomen, the gall-bladder containing these stones was readily found, and fortunately for the patient, no evidence of carcinoma about this organ, liver or pancreas was discovered, with the exception of one enlarged freely movable lymphatic gland. As he could not bring the edges of the gall-bladder to the edges of the abdominal incision, and there was evidence of the patency of the cystic and common duct, Dr. Armstrong closed the opening of the gall-bladder and dropped it back. He then passed a glass drain down to the suture line in the gall-bladder as if any bile had escaped from the gall-bladder, the condition would have been the same as if the gall-bladder had not been sutured. The patient made a perfect recovery. An additional reason for operating for gall-stones in elderly people, was that the injury and local irritation caused by their presence might be an exciting cause of malignant disease. The association of gall-stones and malignant disease in the neighbourhood of the gall-bladder had long been noted.

The second bottle contained a lot of gall-stones which had been removed post-mortem by Dr. Stenning, of Coaticooke. Their interest was in the fact that there were 3 pretty large stones, with 78 small ones. Mr. Tait had drawn attention to the fact that as a general rule gall-stone cases were divided into two distinct classes. In the first, there was one, two, or three, seldom more, large stones, and in the second a large number of small stones. This was the first instance coming under the notice of Dr.

Armstrong in which the small and large stones were found together in the same case.

Dr. ADAMI agreed that it was very unusual to find large and small gall stones together in one case. With reference to what Dr. Armstrong had remarked concerning the etiological relationship between gall stones and hepatic carcinoma, he reminded the Society that during this session he had exhibited a case in which this relationship appeared to exist, a case in which the bladder, full of gall stones, had become the seat of a suppurative inflammation, and cancer of the liver substance developed immediately outside the chronically inflamed bladder.

A Case of Multiple Carcinomatous Growths in a Cirrhosed Liver.

Drs. FINLEY and ADAMI brought forward this case, which was of interest both from a clinical and anatomical standpoint. Dr. Finley read the following history of the case:

C. D., aet 50, an Italian laborer, was admitted to the Montreal General Hospital December 24, 1894, complaining of swelling of legs and abdomen.

Personal History—He has always been extremely temperate and has not had any venereal disease. He has enjoyed good health up to the onset of the present illness. The family history is unobtainable as the patient speaks but little English. The present illness began on the 25th of October, with severe pain in the right hypochondrium radiating over the abdomen. A month later the abdomen began to swell and the pain disappeared. He has lost much flesh and strength.

Present Condition—He is much emaciated, the cheek bones are prominent and the muscles small and soft. A moderate degree of jaundice is present, the conjunctivæ being yellow and the skin brownish-yellow in colour. The tongue is heavily coated, the bowels constipated and the appetite poor. The temperature ranges from 97° to 99°, pulse 88 and of good volume. The abdomen is much dis-

tended and enlarged veins are seen iu the flanks and over the right hypochondrium. The presence of a large quantity of free fluid is indicated by movable dulness and fluctuation. There is distinct fulness in the hepatic region, both in front and behind about the angle of the scapula. Hepatic dulness extends from the fifth rib to a hand's breadth below the costal margin and measures six inches. The edge of the liver can be felt through the fluid. Spleen is not palpable. The fæces are coloured, the urine very dark, with a deposit of amorphous urates; acid, S.G. 1020; no albumen, no sugar. Urobilin with Huppert's test. Tested for bile with nitric acid only a purple ring on filter paper.

December 26, 82 oz. of clear yellow fluid withdrawn with the aspirator. After paracentesis the lower end of the spleen is distinctly felt. The hepatic enlargement involves the right lobe only, its border passing beneath the ribs at the right parasternal line. The surface is slightly nodular and hard. Early in January nourishment was refused and rectal tenesmus with small clay-coloured stools set in. Death occurred on January 6th, being preceded by delirium, involuntary evacuations of urine and a semi-comatose condition..

The diagnosis lay between cirrhosis and carcinoma of the liver, the former being specially suggested by the enlarged spleen. The rapid emaciation, together with enlargement of the liver, an enlargement which it will be noted involved only the right lobe, was, however, strongly in favour of cancer, as was also an absence of an alcoholic history. Obstruction to the portal system evidenced by ascites would also explain the splenic enlargement. Urobilin and not biliverdin was constantly present in the urine, a fact which has been specially noted by Jakseh in the jaundice of hepatic disease.

Dr. Finley stated that at the autopsy performed by himself and Dr. Williams the body was found deeply jaundiced. The abdomen contained a large amount of fluid.

The liver weighed 4140 grms.; its right lobe was greatly enlarged, extending below the costal border and it was thickly studded with yellow nodules varying in size from that of small shot to that of a walnut. The larger nodules were friable and caseous in the centre. The left lobe had a roughened cirrhotic surface, was firm and somewhat dimished in size. Both externally and on section it presented the appearance of an atrophic cirrhosis. No nodules were discovered in it.

The spleen was greatly enlarged (1060 grms) and firm. To the naked eye the condition resembled that of cancer of one lobe and cirrhosis of the other, and sufficed to explain the symptoms which, as above noted, were those both of cancer and of cirrhosis.

Dr. ADAMI described the microscopical appearances of the liver. The right lobe on section had the appearance, observable in cases of extensive cirrhosis, of sharply marked-off small islands of liver tissue, many of them of pale yellow colour standing out sharply from the surrounding tissue. In addition there were the larger and yet paler nodes of cancer. On microscopical examination the extensive cirrhotic change of monolobular type was well observed. The nodes or masses of new growth were sharply encapsulated. He felt some hesitation in describing them as fully developed carcinoma, for there was a tendency to preserve the type of liver tissue. In parts the cells tended to be arranged in columns resembling the relationship in the lobules of liver tissue, and judging from the amount of bile pigment deposited in some of them (as in cells of the surrounding functional tissue) they were not so far removed from the normal as to have lost all specific action. Again, the growths were not infiltrating, but were sharply defined and encapsulated. But in general the evidence of regular growth had been lost and the cells were massed together without regular order, while degenerative processes had affected the centres of many of the masses. Perhaps the term adeno-carcinoma would express this

transition from simple to cancerous overgrowth. Frequently in cases of primary growths in the liver this difficulty is met with. Sections taken from the left lobe showed nodules of overgrowth, rare and small compared with those in the right. Here the cirrhosis was extreme. Dr. Adami compared this development of multiple overgrowths of gland tissue in the cirrhotic liver to the more frequent development of adenomata in the cirrhosed kidney. In both organs there occurred a cutting off of portions of the gland by bands of interstitial fibrous tissue followed by proliferation of the gland tissue and the development of adenoid neoplasms.

Thus microscopical examination fully confirmed the conclusions arrived at by Dr. Finley in his study of the case during life, and explained the clinical history which he (Dr. Adami) had heard that evening for the first time.

On Two Different Conditions of the Mitral Valve Giving Rise to Presystolic Murmur.

Dr. ADAMI exhibited two hearts. The first case was one of extreme mitral stenosis from a patient in Dr. Stewart's wards at the Royal Victoria Hospital. The patient gave the frequent history obtainable in cases of mitral disease, namely, that of attacks of acute rheumatism. Here there had been an attack fifteen years ago and another in January, 1892. There had been a premature labour at the eighth month six years ago, with evidences of albuminuria and dropsy. From this there had been only partial recovery, the slightest cold sufficing to bring on swelling anew in the lower extremities. In August last pulmonary trouble supervened and œdema became constant. There was dyspnœa and profuse expectoration. The condition became more severe and the patient was admitted into hospital upon January 6th.

On admission, not to enter into full details, the pulse was of fair tension and regular, the arteries felt a little sclerosed. There was a diffuse impulse in the fourth and fifth spaces, and a strong impulse was felt in the fifth inter-

space at the nipple line. First sound rather muffled, second fairly clear. Both systolic and presystolic murmurs were heard traceable towards the axillary line, with a diastolic blowing murmur at the apex, heard, however, much better along the left border of the lower half of sternum. As the autopsy showed this murmur probably originated in the right heart.

The heart was of great size, 450 grm., right auricle greatly distended, passing well (4 cm.) over the middle line. The distended right ventricle formed the whole anterior surface of the heart below and to the left, the left ventricle being completely out of sight, and the apex lying close upon the seventh rib in the anterior axillary line. Evidently, therefore, the impulse felt during life in the fifth interspace at the nipple line must have been due to the systole of the right ventricle.

There was, as the specimen showed, extreme stenosis of the mitral valve with thickening and sclerosis of the aortic valves, but by the usual test these last showed themselves still competent.

The stenosis of the mitral was so extreme that the slit-like opening was only one centimetre in length. The valves were markedly fibroid. The aorta showed patches of atheromatous degeneration that had not passed the fatty stage, most frequent in the abdominal region. The patient was only 36 years old.

The second heart was from a youth of 16 years of age, also an occupant of Dr. Stewart's ward. In this case the history was more especially one of chorea. There was one attack at the age of seven which lasted for two years, another of a month's duration when he was twelve. The only, rather doubtful indication, of acute rheumatism obtainable was that the last illness began in May, 1894, with pain and stiffness in the joints and marked swelling of the finger joints lasting for one day; with this there was shortness of breath, which steadily became accentuated.

On admission on January 22nd the patient was ex-

tremely anæmic, poorly nourished and feeble. The cardiac impulse raised the whole side of the chest, extending for five inches from the third to the seventh ribs. The apex was recognizable at the seventh rib, four and a quarter inches from the mid-sternal line. There was a roughish systolic murmur at the apex heard all over the anterior aspect of the chest and back. At the back it could be heard as low as the line joining the crests of the ilia. At the fifth space there was a rough presystolic murmur not transmitted. Presystolic thrill plainly felt at the level of the fourth rib.

On opening the chest the heart was found to extend 5.5 cm. to right of median line and 10 cm. (four inches) to the left. The apex in the sixth interspace. The right auricle was greatly distended. The anterior aspect of the ventricular region was formed about equally of right and left hearts. Left auricle fairly flaccid, but had evidently undergone so much previous distention that the auriculo-ventricular groove was almost eradicated and the walls almost parchment-like and fibroid rather than muscular, the appendix appearing not so much as a prolongation, but as a diverticulum off at right angles to the auricular cavity. With this the mitral orifice was found much larger than normal. In the adult this orifice should admit roughly three fingers; here in a boy of sixteen it admitted five, and was 11.75 cm. in circumference at the narrowest part. The valve flaps were moderately sclerosed with very slight roughening and vegetation. The chordæ tendineæ were thickened, the papillary muscles large and fibroid at their apices. The left ventricle presented extreme dilatation.

The aortic cups showed small wreaths of old vegetations below the line of apposition. They were, however, quite competent. Thus this case differed from those of Dr. Austin Flint. (*Lancet*, Jan. 27th, 1883.) The right heart presented no great abnormality. Contrary to what was the case in the previous heart, here the tricuspid orifice was above the normal capacity.

Commenting on the cases Dr. Adami said: "In these two hearts, apart from other points of interest, we have the history of well-marked presystolic murmur associated with the diametrically opposite conditions of extreme stenosis and of dilatation of the mitral orifice. In the one case the stream of blood pouring through from the left auricle into the ventricle at the end of ventricular diastole must have been peculiarly fine and have passed through with considerable force; in the other there must have been a large stream passing slowly. In the former the wall of the auricle was distinctly of a muscular type; in the latter the muscle was thinned and weakened. The edges of the mitral orifice in the case of stenosis were smooth, in that of the dilatation were slightly roughened.

"These two cases then, so far as they go, show that the presystolic murmur is not dependent upon the absolute size of the orifice, and I would go so far as to say that with such extremes it cannot be dependent even on the relative size. They show also that the condition of the edges of the orifice, through which the stream of blood pours, must only play a secondary part; and, in short, if we accept the view that the presystolic murmur is auricular systolic, due to the pouring of blood into the ventricle in consequence of the contractions of the auricle, they make it extremely difficult to assign a cause for its development. The one point in common in the two cases is disease of the mitral valve. That, so far as I can see, is the only common ground."

THE

Montreal Medical Journal.

VOL. XXIII. APRIL, 1895. No. 10.

THE ADIRONDACK COTTAGE SANITARIUM.

The tenth annual report of the Adirondack Cottage Sanitarium just issued is a record of unpretending but highly important and successful work During the year ending the 1st of November, 1894, 148 patients were treated in the sanitarium, 75 of whom were still in residence at the end of the year.

The report concerning the remainder, 73 in number, is as follows:

CLASS I.—13 PATIENTS WHO REMAINED THREE MONTHS OR LESS.

Condition when admitted.		Condition when discharged.	
Incipient cases	2	With disease arrest'd	2
Advanced cases	4	" improved	3
Far advanced	7	" unimproved	7
With doubtful evidence of phthisis		Died	1
Total	13	Total	13

NOTE.—Number of patients who gained weight, 5; average gain, 4 lbs.
" " lost " 4; " loss, 3 "
" " not weighed, 4.

CLASS II.—60 PATIENTS WHO REMAINED FROM 3 TO 38 MONTHS.
Average residence, 11 months and 29 days.

Conditi'n of patient when admitted.	Apparently cured.	Disease arrested.	Improved	Unimpr'v'd or failure.	Died.
8 incipient cases..	5	2	1	..	..
30 advanced " ..	7	10	8	4	1
22 far advanved....	..	8	8	3	3
60 Total.....	12	20	17	7	4

NOTE.—The death in the "advanced" class was complicated with 'pneumonia."

The above figures show conclusively the value of the treatment carried out at the Sanitarium. This consists in open air, hygienic and climatic influences, together with the employment of a modified tuberculin in suitable cases.

Eight cases were treated to a conclusion with tuberculin during the year. In three of these cases the disease was advanced and in five far advanced on admission. When discharged three were apparently cured and in three the disease was arrested, while two died. There remained under this treatment sixteen.

Dr. Trudeau in his report says: "Ten years ago the Adirondack Cottage Sanitarium was but an untried, and to many, a visionary scheme. To-day the institution stands an accomplished fact. It is a little village of small cottages and other buildings—a village with its independent water supply, its barns and stables, its main building, its library, its infirmary for the very sick, its recreation hall, and it offers to consumptives of moderate means as good a chance for life as can be purchased anywhere at any cost. Its good cause and its friends have been from the first its sole assets, and yet from these each year enough has been realized not only for its support, but for its steady growth and development as well. A free bed fund of $14,000 has been accumulated, to the interest of which is added each year all contributions received for this object, and through which it gives aid to the very poor, and $25,000 have been put aside toward a permanent endowment fund.

"For ten years the Sanitarium has held out a helping hand to a class of patients for whom little or nothing is ever attempted. It has shown that something can and should be done for the consumptive. Let us hope that still more is to be done in the near future."

It is with great pleasure and thankfulness that we place before our readers this account of an institution that is accomplishing such a great work. The excellent work accomplished by Dr. Trudeau has far-reaching effects. Many of his patients are not only enabled to live and work, but

they acquire an education on how to live and how to prevent and stay the progress of pulmonary tuberculosis. They go forth from the Sanitarium missionaries, preaching the value of pure air in the prevention and cure of disease. They are themselves living examples of the truth of the doctrines they preach.

We cannot conclude our reference to the Adirondack Sanitarium without calling attention to the needs of the institution. It is supported solely by voluntary contributions, and we are sorry to say that Canadians have not as yet given anything towards it. This is regrettable, seeing that so many of our citizens have been treated there. It is to be sincerely hoped that some of our wealthy people will contribute towards the support of an institution that has done so much to help many of our unfortunates.

THE CANADIAN NURSES' ASSOCIATION.

In December, 1894, we made a few remarks concerning the progress of the Training School for Nurses in connection with the Montreal General Hospital. It is now our pleasant duty to chronicle a still further advance, namely the establishment of an Association which will bring the nurses still more in touch with one another, and also with the Doctors. We trust the Association will help to elevate the profession of nursing—for the "old-time" nurse—one incapacitated by age, feebleness or ignorance has passed away. The forlorn train of sick-room spectres has disappeared before the bands of the young and hopeful, to whom life has not lost its charm, who are ready to devote themselves in their youth and strength to this work of humanity. It is no light task they are called upon to perform. There is, perhaps, no calling in life which demands a more constant exercise of all the Christian virtues than that of nursing. In nursing, ample opportunity may be found for the use of even high intellectual attainments. When we remember that the care which a nurse gives her patient will often decide the question of life or death, we invest

her calling with a new dignity. Yes, the profession of a nurse is a noble one, for it is no light thing to be able to lessen the amount of human suffering. The assurance that she can do this will stimulate the true nurse to qualify herself by careful study and practice for the best performance of her work. But is her training complete when she leaves her hospital? Oh, no. She has only learned the rudiments there, she is to continue her education among the sick, the suffering and the dying. It is in the sick-room when far removed from her Alma Mater, that she will first know what it is to be a "Trained Nurse." She will then realize her responsibility and feel how little she really knows and how much she has to learn. It is then she will gladly turn to the Nurses' Association, knowing that there she will meet with those who can help her—with those engaged in the same work, and in consulting with them and reviewing the difficulties and responsibilities will gain fresh courage and renewed energy for the future. With the view of providing for, the needs of the graduate nurse, after she leaves her hospital, and also of bringing her within easy access of the doctor, a meeting was held on March 25th, when it was decided to open a directory for nurses. A committee was formed from among the graduates and Mrs. Burch (177 Mansfield Street) was appointed registrar. The first day twenty-six names were placed upon the books.

Already the directory has been found a great convenience to the members of the medical profession practicing in the city, and we trust in time our confrères in the country will also benefit by its establishment. The association is still in its infancy, but at no distant period we expect to see a club-room, containing a good library well stocked with books of reference. We hope to hear our nurses read and discuss papers in connection with their profession. We want them to keep abreast of the times, and as new methods of treatment are continually being introduced they should have an opportunity of hearing and reading

about the latest improvements with reference to their work, and thus fit themselves to take their proper places at the doctor's right hand. We feel that this association is filling a long felt need, and it has our best wishes for a successful future.

THE INFLUENZA EPIDEMIC.

The present epidemic of influenza is gradually subsiding, not only on this continent, but also in Europe. In its wide distribution the present outbreak resembles more closely the first epidemic of the disease in 1890, than the annual recurring outbreaks in the intervals. The mortality from this disease would appear to be very much greater in England and the Continent than on this side of the Atlantic. In Scotland, particularly, it has been very prevalent and very fatal. In regard to treatment little has yet been learned. The experiments recently conducted in Germany with regard to an antoxine treatment have not as yet developed anything important.

Obituary.

DUJARDIN-BEAUMITZ.

Dujardin-Beaumitz, the well-known French writer on general therapeutics, died at his home in Paris on the 16th of February.

DR. GEORGE WRIGHT.

The news of the death of Dr. George Wright late of Toronto, will be learned with deep regret by very many in Canada. At one time he was a leading practitioner in Toronto and for many years occupied a prominent position on the teaching staff of the Toronto School of Medicine. He also took a leading part at many of the meetings of the Canadian Medical Association in the seventies. He was a clear, able and forcible speaker.

DR. D. HACK TUKE.

Dr. D. Hack Tuke, the noted alienist, died at his home in London on the 6th ult. His name is well known in Canada since he first pointed out the backward state of certain asylums in this Province. His timely and well-directed exposure of the incompetency of the officials in these institutions has borne fruit. Although there is still room for improvement, there is a marked change for the better since Dr. Tuke paid his memorable visit.

Dr. Tuke was a hard worker in his chosen field and has done much, not only in Canada, but elsewhere, to advance the scientific treatment of insanity.

DR. JAMES HEWITT.

At a regular meeting of the New York Otological Society, held at the Academy of Medicine last January, the following resolutions were unanimously adopted, and incorporated in the minutes of the Society.

The New York Otological Society desire to place upon

its minutes the sense of the loss it has sustained in the death of Dr. James Hewitt, one of its founders.

Although but a young man at the time of his death, Dr. Hewitt had already attained a prominent position in his profession, and had he lived, would undoubtedly have become one of the distinguished aurists of his time.

With a singularly retiring and quiet nature, he had a most genial and cheerful disposition and a simplicity of bearing and kindliness in speech and manners that endeared him alike to his friends as well as his patients.

Resolved,—That these resolutions be printed in the medical journals of this city, and that a copy of the same be sent to the family of the deceased.

Committee, Graham Bacon, M.D., J. B. Emerson, M.D.

Dr. Hewitt was one of the founders of the Association.

Medical Items.

—Dr. K. N. Fenwick, of Kingston, has donated the sum of $2,500 to the General Hospital of that city for the erection of a new operating theatre.

—There is a great decline in the number of students attending the different Scotch Universities during the present session as compared with previous sessions. In Edinburgh the decrease, as compared with 1889, amounts to 531, and in Glasgow to 200.

—A society has been formed by the Medical Faculty of the University of Kieff, having for its object the repression of infectious diseases. A fund has been raised which will for the present be applied to the investigation and application of the antitoxin treatment in diphtheria.

—The beautiful first court of the General Hospital at Vienna is graced with several statues of eminient physicians and surgeons. It has been decided to add to their number memorials of three of the most eminent men in medicine of the present century, viz., Skoda, Rokitansky, and Billroth.

NEW METHOD OF STERILIZING ABSORBENT COTTON.—A piece of the cotton is taken and wrapped about the extremity of a probe. This is dipped in an alcoholic solution of boracic acid and then set on fire. The alcohol burns and the boracic acid prevents the cotton becoming carbonized. Five seconds is sufficient for the process; when the flame becomes coloured a bright green it is extinguished. The cotton remains unchanged, but both it and the holder are completely sterile.—Hermoyez et Helme, *La Presse Médicale de Paris*, Feb. 2, 1895.

—The influence of a pure water supply in diminishing the number of cases of typhoid fever is strikingly shown in the results attained by the French Military Surgeons

In 1887, no less than 9,150 cases of this disease were reported in the French army. As the direct result of improved water supplies to barracks and camps, there has been a steady diminution in the number of cases of this disease up to the present. In 1894 only 2,788 cases were reported. No better example of the influence of a pure water supply in the prevention of typhoid can be found than in Vienna. Previous to the new supply typhoid was very frequent, but now it is a comparatively uncommon disease in the Austrian capital.

—The foreign and colonial edition of the *British Medical Journal* is now printed on a better and thicker quality of paper. This will prove a great boon to the many readers of this edition. If the advertisements were printed in smaller type, it would allow the publishers room for the use of larger type in the reading matter. Such a change, we are sure, would also be very acceptable. The object of specially small type and thin paper is to save postage. The same end would be gained by printing the advertisements in ordinary type. Enough space would be gained to allow of the same quality of paper as is used in the edition for the home readers and the type of the reading matter could also then be made the same throughout.

—For many years the College of Physicians and Surgeons of Quebec have appointed assessors to visit and take part in the examinations of those students who intend qualifying for the practice of their profession in this Province. Every year they have reported on the character of the examination, but we believe none of these reports have reached the profession. Recently these reports have been much more full and complete than in former years, and it is the bounden duty of the Council to make them public. The profession have to pay both Council and assessors for the work they do, and of necessity they should know what they are paying for. The minutes of the meeting of the Council held last September has just been issued in French (only), but it contains no account of the character or extent of the examinations held by the different Universities.

THE BLOOD SERUM OF THE HORSE AS A REMEDY FOR TUBERCULOSIS.—Dr. Paul Paquin, Professor of Bacteriology in the State University of Columbia, and member of the State Board of Health of Missouri, has, as we learn from the New York *Medical Record*, been experimenting with the blood serum of the horse in the treatment of tuberculosis. Having convinced himself that the horse is naturally immune against tuberculosis, he has for some months been using the blood serum of selected horses, carefully injecting the serum under the skin of patients suffering from tuberculosis. Dr. Paquin maintains that the horse being naturally immune against the disease, the blood can be used direct without any artificial immunisation. The serum is said to have been used in about fifty cases with almost uniformly satisfactory results.

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A MONTHLY JOURNAL OF MEDICINE AND SURGERY.

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Subscription price, including postage, $2.00 per annum, in advance. Single copies, 25c.

The volume commences with the July number, but subscriptions may begin at any time.

Address

THE MONTREAL MEDICAL JOURNAL CO.,
Care of GAZETTE PRINTING CO.,
MONTREAL

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXIII. MAY, 1895. No. 11.

Original Address.

VALEDICTORY ADDRESS DELIVERED AT THE CONVOCATION FOR CONFERRING DEGREES IN MEDICINE, McGILL UNIVERSITY, APRIL 4TH, 1895.

BY J. G. ADAMI, M.A., M.D., (Cantab.) M.R.C.S., Eng.,
Professor of Pathology in the McGill University, Montreal.

"*Caute, caste et probe.*" SPONSIO ACADEMICA.

GENTLEMEN OF THE GRADUATING CLASS,

This crowded hall, the honoured figure of our presiding Chancellor, the old well-known row of professors on the daïs, the Dean and his report of the results of the session's work, the Registrar administering the oath, the capping, the speeches, the cheers, the good humoured chaff—all these have become familiar to you in the years that have gone by since first you entered McGill. You have yourselves saluted year after year of your seniors, have seen the graduates of our Faculty pass out from the university into the universe, have sped the parting guests. To-day to you this old familiar scene must appeal with an altered and deeper significance. Now the supreme moment has come to you as in your turn you become the occasion of the ceremony, as you are about to leave us and test yourselves against the larger world, each endowed with the

"exeat" of our University. Moments such as this in the lives of each of us are critical moments. Marking, as they do, the transition from one epoch to another, they are for each of us, individually, rubricated and historical. All these years you have been preparing yourselves for what is to be your life's work. To-day you stand upon the threshold of the entrance into that work.

I would very willingly this day have seen you receive the "send-off" from one of my colleagues occupying a higher position in the Faculty than I, one who from his experience has a greater right to speak, a greater certainty of appealing to you on this which to you is so critical, and if you are as other men are, so susceptible a moment. Nevertheless, if other words would touch you more surely I trust that the fibres of your mind being high strung, some sentence or two of what I am about to deliver to you on the part of our Faculty may strike a chord thereon, so that in the years of the future there may still surely remain with you memories of these last moments spent under us here at McGill, of the first moments of your existence as fully qualified medical men.

It is but natural that standing on the threshold you look forward into the future. What is that future to be? How are you prepared to face the world? How are you to carry yourself in it? What are to be your ideals, what the goal towards which you strive? These are questions you must all be asking yourselves, and it will be well if you start on your journey armed aright and with clear knowledge of the motives that are to guide you.

One thing may, I trow, be taken for granted, namely, that you have selected your profession for higher motives than that of making a livelihood; if you have not, then of all men you are to be pitied.

There is a very clear "call," as some sects express it, to medical work. I have never known a successful medical man who has not wholly and entirely loved his work—I doubt if he exists. The true medical man takes to medi-

cine instigated by a profound liking for the subject—almost if not quite by instinct—and that being so, to the true medical man the fact that his profession will assure him a fair competency and independent position is and must be a secondary matter.

No profession, as you know full well, makes greater calls upon its followers than that of medicine. In season and out of season you are liable to be called upon—or more truly every hour of the twenty-four from year end to year end is the doctor's season. Not only is your time not your own, but each case that presents itself demands honest thought and the fullest endeavour on your part to put forth all that you possess, irrespective of what the monetary result is to be. Love for the work is and must be first. This may be an instinct wholly unassociated at first with any idea of doing good, but the very liking and desire to engage in the work must lead you to seek every opportunity of practice and so, willingly or unwillingly, the good is done.

Of old it was said that where there are three medical men there are two atheists. Most assuredly this is not so. It is only true that the habit of independent thought and of striving to determine the why and wherefore of things, which is second nature to the physician, is not in accordance with the straitest theology, and tends often towards heterodoxy. Nevertheless, no profession demands from its followers the more constant exercise of practical Christianity. You have entered into a profession of which it is the noble tradition dating back centuries to the school of Salerno, and yet earlier, that the call of the afflicted and needy is to be attended to, and attended to with no second thought. To this extent the exercise of your profession is pure religion. It rests with you to preserve it undefiled. This is the *religio medici*, whatever else be added thereunto by the individual. The medical life is the practical exercise of this religion. If your main thought in looking to the future is that medicine will bring you money and

position, that attitude of mind alone makes you traitors to the traditions of your profession—you would better renounce the labours and the results of all these years and enter into some trade, adventure or other concern. There you can be honest to yourself and your employment. Anything but medicine for such an one. For such an one *esto anathema.*

You have entered into the noblest and freest of all the professions. I say this unhesitatingly. Law may be noble, but there is no tradition among its followers to do gratuitous good to other than to lawyers. The life political may lead to the well-being of the whole community, but most of its good is destroyed by the necessity of giving up to party what was meant for mankind. The church, with its lofty work, may question the right of medicine to occupy the noblest place; yet, while the church holds many, very many men of conspicuously noble life, I doubt myself whether its bonds do not for many render life ignoble. Each of us in the course of our existence comes across some few (but how few !) of conscience so pure, mind so serene and faith so natural that for them the great problems of existence seem to solve without difficulty, in fact, seem not to be problems at all. Most of us mortal men, I fear, if we think at all and utilize or strive to utilize the minds that have been given to us, belong to that purblind race.

> Here, thro' the feeble twilight of this world
> Groping, how many, until we pass and reach
> That other, where we see as we are seen.

And groping and seeing things darkly, our opinions as to these things vary so much that what at one time seemed true, at another seems false. Thus, if a talent or talents of thought have been entrusted to them the time must come to most in the ministry when either the results of thinking lead outside the limits of those articles of faith they have sworn to maintain unswervingly, or the fear of transgression of the bounds inhibits thought and renders the man a caitiff to himself and his prerogative. Lofty

and noble as are the ends, the bonds, the necessary bonds, for most are weakening.

Our profession is girt about with no such limitations. We can think freely, we can and should employ any and all means that prove themselves good. As men and free agents we are untrammelled in the exercise of our life's work. The only serious doubts that can come to us in labouring faithfully are as to whether we fulfil our mission and do aright when we save sundry who, continuing to exist, will have feeble and diseased progeny, and will lower the quality of the race, or when with unceasing care we oil the lamp of life in those to whom euthanasia would bring abiding rest. But the remembrance of our duty stills these doubts—our duty is to save. It is not given to us to determine who is of value and who is valueless; that is not in our hands. We have the consolation that while in a few cases we may seem to be aiding and abetting the degeneracy of the race, in general by our work and its influence, we are raising the standard of existence, lengthening the life of each and making the race healthier.

If, then, our profession be noble, it behoves each one of us and of you to do nothing that shall degrade it. Its dignity and high standing depends upon the dignity and standing of each member, and each one that lowers his individual standard lowers medicine. With Bacon, "I hold every man a debtor to his profession, from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavour themselves by way of amends to be a help and ornament thereunto." Thus while the fullest freedom is yours to do what seems good in your work, as workers, and in the manner of your work your duty to the body corporate of medicine must ever be kept in remembrance, and faithfully acted upon.

It may be that at times you will find it hard to act up to your duty and that the trial of your loyalty may be a sore trial. I say this advisedly. It may, for example, seem hard to you that men in trade can compound medi-

cines and sell them far and wide to a gullible public and amass fortunes thereby without being under the necessity of publishing at the same time their composition. Verily they have their reward. But do you ever keep in remembrance the higher self-denying precept of our profession that whatsoever you discover for the good of suffering humanity must freely become the property of those who, with you, are striving to allay disease. Acting on this same precept shun all alliance, direct or indirect, with those dealing in secret cures or possessing nostrums for the manufacture of gold.

It may be that feeling yourselves strong, and finding yourselves unappreciated by your fellows, you may in bitterness believe them to be combined for self-protection to prevent your rise. Do not permit such thoughts to gain the ascendancy, but in humility commune with your own hearts and seek to find what it is in yourselves or in your conduct towards your brethren that has rendered you unpopular. Depend upon it the fault or failing originates in you. Do not as you honour your profession render yourselves unworthy thereof by advertising to the public, or place yourselves outside the pale by playing upon the tenderest feelings of the laity. It is so easy to do that. Do not take steps which, were they successful and were they followed by the rest of your professional brethren, would absolutely prevent students from attaining that knowledge which has been freely imparted to you. Freely have ye received, freely give. Let it never be even suggested that for selfish aims you have sought to bar the gates of knowledge. The doctor must not only be *sans reproche*, he must be above suspicion.

It may be that temptation comes to you to leave the bulk of your fellows and gain a *clientèle* and make a more rapid fortune by pursuing some exclusive method of treatment. Alas for poor humanity! You may be tempted to attract patients and a name to yourself by electro-magnetism. You may be tempted to gain a bubble reputa-

tion, and float into prosperity upon cold water ; or finding your prospects along the ordinary path to appear at first infinitessimally small, on the principle that like cures like you may be tempted to employ the infinitessimally small to better your condition.

To travel yet once more the old familiar ground : In studying the processes whereby the organism reacts towards and seeks to repair injury, if you have learnt one lesson it is this, that nature is not exclusive, she does not employ one means of cure. It is not by cells of one order alone, by phagocytes, or by leucocytes in general and only leucocytes, or merely by the reaction on the part of the cells of the tissue, or by nervous changes alone or by altered temperature, or solely by the chemical and mechanical action of the exudate that repair is effected. Nature employs all means at her command to antagonize the irritant and to effect healing. The cells of the body fixed and free play their part, the nervous system aids the process, the bodily humours render efficient help, modifications in the vessel walls and blood stream are valuable auxiliaries. The lesson that you have learnt is that nature employs diverse processes, now one more particularly, now another, according to the needs of the moment, but none exclusively. If modern research has accomplished nothing more, it has most surely established this fact. And we, if we are possessed of the sincere desire to benefit our patients, must not, nay cannot, narrow ourselves down to the fanatical employment of one solitary means, or the guidance of one restricted rule ; we must be broad minded. If water will do good at a certain stage, employ it—if a good honest dose of castor oil, employ it—if pillules of a sort are of proved merit, employ them—if stimulation of the nerves, then stimulate. He who holds to the exclusive or even the predominating use of but one means of treatment writes himself down—well—in one or other of a humiliating alternative of terms.

It may seem, gentlemen, that I have spent too great a portion of the short time at my command in dilating upon

this matter of medical morals. But as I said before I have done so advisedly. Knowing you, I do not think that there is a great likelihood of any of you becoming conscious transgressors of our code. Yet year by year in the yearly growing bitterness of competition, the tendency is becoming more and more marked for the weaker brethren of our profession to seek to copy examples of commercial success—and, frankly, I fear what the future may bring forth. There is all the more need that you as graduates of this University hold high the torch of professional rectitude. Apart from, though akin to what is expected of you as medical men, there is ever to be kept in mind what devolves upon you as graduates. According to the usage of the mother country this day the University in conferring upon you its degree of Doctor has with it given to you the title of "gentleman." That title is now yours by right. Remember this, but do not be satisfied with the mere title. Be gentle in word, gentle in thought, gentle and kindly in deed, bearing this grand old name without abuse. Let this thought fortify you in the hour of trial if ever it comes to you—that apart from your rank as medical men you are graduates of a University, and that University, old McGill.

Thus much, then, concerning the armour wherewith you are to gird yourselves and the goal whereunto you are to strive. Now for a few brief words upon your bearing and the setting forth on the journey.

Let your first steps be very cautious. Now, when all these years of instruction at school and college have come to an end you may very naturally be thinking that you know much. But instruction is one thing, true knowledge quite another. You may be crammed with principles, with facts and the deductions from those facts; but you have had little time to recognize the application of those facts little experience, little time to assimilate, and until they are properly digested and assimilated they are of little value. Believe me when I say that you know next to nothing. Forgive me for putting it so bluntly. We, your teachers, have

travelled over the same road. You will find it out to your cost, and to your patients' cost, during the next year or two —only now do you begin to gain full knowledge. Do not make that most unscientific mistake of thinking that from the voracious caterpillar constantly cramming food into its insatiable maw you emerge forthwith into the perfect and lovely *imago*. That is not the case—at least, not among the higher insects. You have to pass through the chrysalis stage, a stage of humble suspense, in which the results of all the cramming are refined and rearranged. We have done our best for you—we have fed you with food that we have endeavoured to make assimilable, even if at times it has been as highly concentrated as those little lozenges which are said to contain each one the nutritive ingredients of a whole mutton-chop. Noble minds and generous have come to our aid and have (if they will permit the homely metaphor) supplied us with the necessary culinary utensils. But while we may have been able to peptonize some of that food, to give it to you in a more or less digested condition, the final stages of digestion and the process of assimilation have of necessity to be performed by you yourselves, the salt of experience aiding.

Do not set out with the belief that, because you know your Osler and your other text-books and can repeat your lecture notes by heart and have followed diligently every operation in the theatre, you are therefore prepared to diagnose and master any and every case that presents itself. This may seem an obvious and unnecessary remark, nevertheless I have followed so many budding house surgeons and house physicians on this side the water and across that I deem it wise to note it. As you have learnt in your lectures in physiology, so many factors are concerned in the proper carrying out of each of the bodily processes, and their interrelations are such that it is ofttimes impossible to predict or fully explain the results of variation in any single factor. So it is also in pathology, in the study of disease. Every case varies and departs in some point or points from the classical symptomatology,

and diagnosis, you will find, is not to be accomplished by simple rule of thumb. In the words of a great modern poet let me impress upon you that

They see not clearliest who see all things clear.

Thus it will be that if you observe carefully, considering each case by itself and using your own judgment apart from what we have said, or X. has said, or Y. has said, though stimulated by these dicta, you will develope, and in the process of development you will discover that X. and Y. and we have ofttimes been mistaken. We have, it may be, told you much that is erroneous, but never mind. We have done our best according to the light that is in us, and if by our mistakes, as by our sound teaching, we have led you to think and to observe and to record, then through you advance is made and the world is the gainer.

Do not think that the giants of the past and the great ones of these latter days have accomplished everything and that there is no advance left for you to achieve. Ours is a progressive art. However small you may be and humble in your own conceit console yourselves: The dwarf perched on the giant's shoulder sees further and sees more than does the giant.

As of old our architype Hippocrates exclaimed in the fulness of his experience, "short is our life and our art is long." * You have much before you and little time in which to accomplish it. I will not detain you longer.

That you may fare well and through you others may be bettered, that you may earn for yourselves names of honour and of respect from those among whom you minister, that you may earn for McGill, your old Alma Mater, ever increasing reputation and a fame known *super æthera*, that is our earnest wish. On behalf of the Faculty I say to each one of you, VALE!

* I am a little dubious as to whether Hippocrates is rightly credited with the original of *ars longa, vita brevis*, for my authority is the "Life and Opinions of Tristram Shandy, Gentleman," vol. ii., chap. xxxiv. of the two volume edition, and during the last few days I have had no time to verify the statement. Yet if the Rev. Mr. Lawrence Sterne was apt to digress and be discursive, he was a fair scholar.

Original Communications.

NOTES UPON CARDIAC HYPERTROPHY.

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I shall, I think, best satisfy you, and at the same time myself, if what I contribute to this evening's discussion takes the form of a series of notes upon the experimental pathology and the anatomy of cardiac hypertrophy, rather than that of an academic survey of the subject from the clinical standpoint. Frequently, it is true, I must of necessity illustrate what I have to say by reference to clinical history, but, on the whole, I shall leave the clinical aspects to be dealt with by those more capable.

In the first place, if we study the causes of hypertrophied heart, whether of hypertrophy of one or both sides, we see this that reading the clinical history of these cases the assigned causes of hypertrophy may be summed up under the heading of *increased work*. This one heading may be subdivided into three, increased work due to resistance from within, increased work due to resistance from without, increased work due to nervous stimulation and augmentor action. I shall not discuss this last subdivision, because frankly we are ignorant how far the hypertrophy that occurs in exophthalmic goitre and allied conditions is due to heightened blood pressure, and how far it is secondary to excitation of the accelerators or augmentors.

Of the increased resistance from within, or increased tension, the main causes are, heightened pressure in the arterial blood stream, and secondly, obstruction to the onward passage of blood within the heart itself, by stenotic diseases of one or other orifice. Of resistance from without, the one great cause is pericardial adhesion. To-night we have, as far as possible, to leave out the subject of valvular disturbance, and I shall neglect nervous disturb-

ances. There is still the large field of hypertrophy due to increased arterial pressure, and the pericardial adhesion. In all these cases, the individual fibres of the heart muscles of the affected regions have to contract under increased difficulty, they have to carry or contract against a greater load, and as a result of this, just as is the case with the skeletal muscles, with the muscles in the blacksmith's arm, and the muscles of the body in the all-round athlete, increased work brings about increased growth—brings about, that is to say, hypertrophy of the muscle.

Into the subject of the nature of this increased growth I shall enter in a few minutes' time, at present I wish to carry a word further this parallel between the behaviour of the cardiac and skeletal muscles, under circumstances in which the load is increased. If you take a skeletal muscle, for example, the gastrocnemius of the frog, so dear to the physiologist, and observe its contraction with gradually increasing loads, there are two points especially to be made out. In the first place the greatest amount of work is not performed with the smallest load, but there is a certain medium load with which the distance through which the load is pulled multiplied by the weight of the load gives the biggest result. This product of weight moved and the distance through which it is moved is the work done by the muscle. The most work, therefore, is done with a medium load. The second point is that with increasing weights fastened or brought to bear upon the muscle, that muscle in its resting state becomes more and more elongated, and with regularly increasing weights attached the shortening attained by the contracted muscle constantly diminishes. Or, to put the matter in a slightly different light, and to combine these two statements of fact, although with a certain medium load the greatest amount of work is done, nevertheless with that medium load the muscle in contracting does not attain to the same amount of shortening as it does with a lesser load.

Let me now apply these observations to what is found in the ventricular muscles of mammals. Experimentally,

the amount of work performed by the ventricles of the mammalian heart can be increased by ligaturing the aorta with a sliploop ligature, and drawing this ligature more or less tight, according to need. [This in an animal that has been narcotised and curarised and subjected to artificial respiration, the heart being exposed by making a window in the ribs.] In such a case as this, as shown by Professor Roy and me,* the behaviour of the cardiac muscle can be observed and recorded by an apparatus, of which I give a rough diagram. (See Fig. 1.) The ends of this apparatus are attached to the surface, say of the left ventricle, by fine threads, and now it is possible to observe upon the recording drum the extent of contraction of the portion of muscle between the two points under different pressures within the heart. Narrow the aorta by drawing the ligature tight and the pressure is increased. Under these conditions it is found that the ventricular muscle reacts exactly along the same lines as does the gastrocnemius of the frog.

Similar results are obtainable if, instead of increasing the pressure in the arterial system by narrowing the aorta, we increase the work of the heart by increasing the amount of blood passing through it, either temporarily, by pressure upon the abdomen, whereby a large quantity of blood is expelled from the abdominal viscera, or by injecting into venous circulation some few hundred cubic centimetres of defibrinated blood. The results in all these cases are the same. By the instrument just described it is easy to see that the heart is more filled in diastole, so that the two ends of the levers are pushed further apart, and that in systole the ends do not approximate so nearly as in the condition when there is less resistance or less blood pouring through the organ.

It is seen from these observations that with increased pressure within the ventricle the wall expands in diastole. There is dilatation of the heart. But with the increased load to contract against the fibres do not shorten to the

* Heart beat and pulse wave. *Practitioner*, February, 1894, p. 81.

same extent; that is to say, with increased work of the heart there is, necessarily, accompanying the dilatation in diastole, a dilation in systole. All the blood is not expelled in systole. There is of necessity *residual blood*, as Roy and I termed it, in the ventricular chambers.

There is a general belief that the healthy heart, even

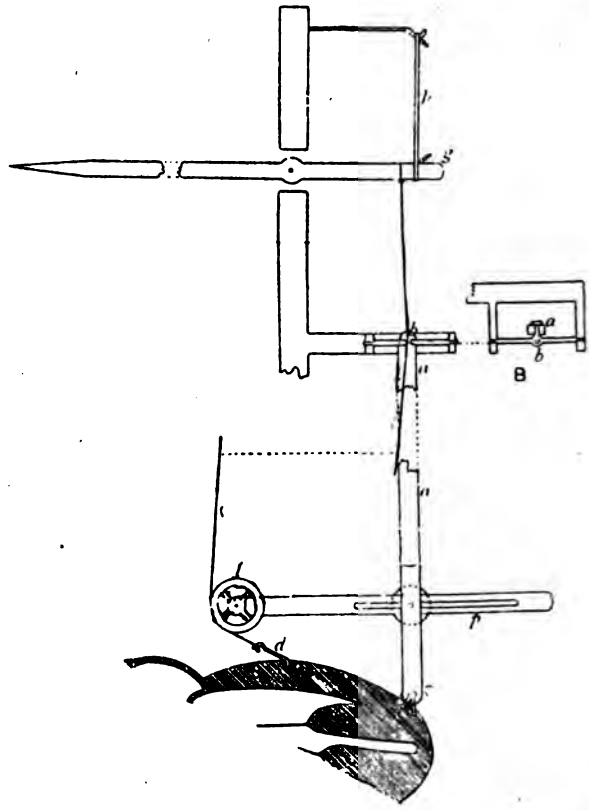


FIG. 1.—Myocardiograph for mammalian heart shown semi-diagrammatically. The light vertical rod *a*, which for convenience of space is shown shortened in the figure, is slung from the pivots which are represented in section as seen from above B. This arrangement allows the rod *a* to swing freely, the centre of rotation being the small hole at *b* (in B) The lower end, *c*, of this rod is fixed to the surface of the heart-wall as seen in the figure. To obtain tracings of the heart-wall, the small hook *d* is inserted in the visceral pericardium at a convenient distance from the end of the rod *a*. To this hook is attached a strong silken thread, *e*, which after passing round the light grooved pulley *f* is conveyed upwards through the small hole *b* to the lever *g*, being kept taut by the fine rubber thread *h*.

under conditions of increased work, contracts completely, so that the chamber is emptied at the end of systole. From what I have said it will be seen that this is not the case. One can go further and prove for one's self that even under ordinary conditions the mammalian heart does not completely expel all the blood within the ventricles. By taking a dog that has been curarised and subjected to artificial respiration, opening the chest wall, making an incision at the very apex of the left ventricle, so as just not to completely enter the cavity, then it is easy to push the little finger into the cavity through the thin apex without the loss of a drop of blood. The heart action is not recognisably disturbed by this procedure, and it can be felt that while the walls of the ventricle in the lower two-thirds up to the apices of the papillary muscles, close completely round the finger, there is a clear space in the upper third which is not and cannot be emptied of blood.

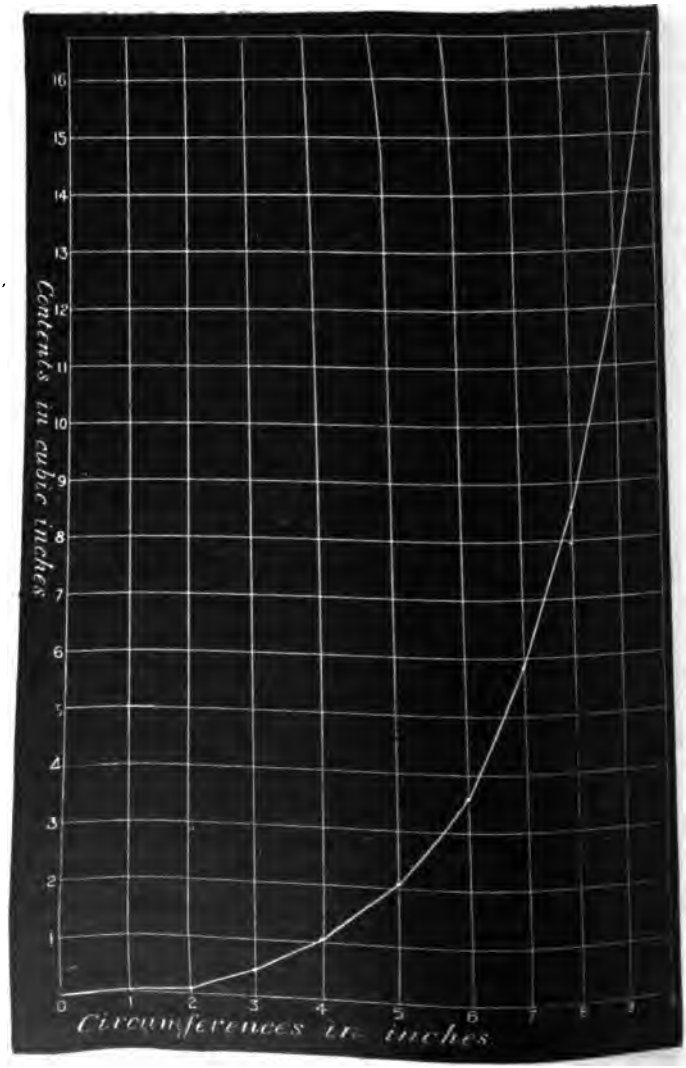
Although it may seem at first sight to have no direct bearing upon the subject of this evening's discussion, nevertheless it is worth while to make a few remarks upon this subject, inasmuch as it is so intimately associated with conditions of hypertrophy without valvular disease. It is quite possible that where there is increased work to be performed by the heart, there is some economy of the action of the organ when there exists a certain amount of residual blood, in and dilatation of the ventricles. Taking the ventricular chamber as a sphere,* there is this to be noted concerning the relationship between the circumference of the sphere and its contents, namely, that as a sphere expands its cubic contents increase out of all proportion, I was going to say, to increase in circumference, or more truly, the ratio between increase in cubic contents and increase in circumference is by no means an arithmetic ratio.

If the circumferences be taken as abscissæ, and the corresponding volumes as the ordinates, the curve of successive

* The sphere is the nearest geometrical figure that can be employed here for purposes of illustration.

values is what is known to mathematicians as a cubical parabola. From this it follows that a degree of shortening of

Fig. 2.



Curve representing the relationship between the circumference of a sphere and its volume, with successive unit increments of circumference.
Ordinates = volume in cubic inches.
Abscissæ = circumference in inches.

the fibres of the heart wall sufficient, let us say, to reduce the circumference of the ventricle one inch, will cause a greater diminution in *volume* (a greater output) the more dilated the ventricle is at the beginning of its contraction. For example, a diminution of the circumference by *one* inch of a sphere whose circumference is *ten* inches causes a diminution of the volume or an output, in the case of the heart, equal to *4.5* cubic inches, while a diminution by *one* inch in the circumference of a sphere *five* inches round causes a diminution or an output of only 1.027 cubic inches, although in the first case the circumference was reduced only by one-tenth, while in the other case it was reduced by one-fifth. That is to say, if we have a dilated heart the fibres will need to contract a very small amount, in order to expel a given amount of blood, compared with the amount they would have to contract in the normal undilated heart.

There are other factors to be taken into account, it is true, and Roy and I went a little into this subject in our paper published in the *Philosophical Transactions.** All that I wish to do here is to point out that it is possible that in a hard-working heart a certain amount of dilatation, with presence of residual blood, by diminishing the extent which each fibre is called upon to contract, may really be an economy to the organ as a whole.

It follows from these observations that *hypertrophy is never primary, dilatation always precedes hypertrophy.* This was recognized as most probable by Hilton Fagge; few other writers have laid stress upon the point. If, however, the heart muscle is well nourished, where this dilatation is due to increased work, by Paget's law hypertrophy ensues, and the numerical hypertrophy or hyperplasia of the ventricular muscle fibre will have the effect of lessening the load of each individual fibre. Consequently, with a lessened load, each fibre will contract more completely and the dilatation will tend to disappear. Where this is the case we have what is known as simple hypertrophy.

* Phil, Trans. of the Royal Society, London, 1892.

There can be no doubt that in the early stages, where ample reserve force and good compensation are present, this simple hypertrophy exists and may persist for years. But I would add that in the post-mortem room it is more rarely to be seen than is generally accepted. If a hypertrophied heart, say of Bright's disease, without valvular lesion, be examined within a few hours after death, in very many cases we appear to have this simple hypertrophy. If, however, time be given for the rigour and contraction of the muscle to pass off it is found—that at least is my experience—that the cavity of the left ventricle is distinctly larger than the cavity of the normal heart. I would say that only in those cases in which death has occurred from some intercurrent disease, and not from one of the cycle of diseases associated with cardiac hypertrophy—only when death occurs before the final stage of the disease of which cardiac hypertrophy is an integral part—do we obtain evidence of real simple hypertrophy. *Eccentric*, and not simple, hypertrophy is the rule; that is to say, hypertrophy associated with definite dilatation of the ventricular cavities.

As for the concentric hypertrophy, which is said to be observable in non-valvular disease, I feel more and more assured that it is falsely so termed; there is no such thing as true concentric hypertrophy, for the condition implies a lack of economy in the work of the organ, a most unnatural lack; it implies that the ventrical in contracting expends a large part of its energy, after expelling the blood, in squeezing up the more internal fibres. Only within the last fortnight I obtained a specimen of so-called concentric hypertrophy. The patient, an old woman of eighty, in Dr. Stewart's ward at the Royal Victoria Hospital, died from cerebral apoplexy, following upon extreme atheroma of the aorta and the main vessels; there was, in addition, atheromatous stenosis of the aortic valves, both conditions favouring the development of hypertrophy, with dilatation of the left ventricle.

The old woman had lingered some days in a comatose condition, with presumable lowering of the arterial blood pressure. In addition the tone of ventricular muscle had been in all probability considerably increased by digitalis. At any rate, at the autopsy a very few hours after death the left ventricle was found hypertrophied, and instead of being dilated was so firmly contracted that the only cavity left was immediately around the chordæ tendineæ. The thickness of the ventricular muscle at the junction of the lower and middle thirds was 20 mm.; that is to say, there was moderate hypertrophy. However, on coming to observe this heart the next day, the concentric hypertrophy had quite disappeared. With the passing off of rigidity there was a relatively large cavity left behind.

Where the left or right ventricle alone is affected the condition of the ventricle may be one of either simple or eccentric hypertrophy. Where, on the other hand, as Walshe noted more than thirty years ago, there is general hypertrophy of the organ, there hypertrophy is *always eccentric.*

A little consideration shows why this must inevitably be the case. So long as there is simple hypertrophy (hypertrophy without dilatation), so long the mitral valves remain competent, and there is no regurgitation into the left auricle, no increased work for that organ to do, no hypertrophy So soon as the left ventricular muscle begins to fail and to be unable to contract properly under its load, dilatation ensues, and with this dilatation expansion or giving way of the muscular ring around the mitral orifice, and with this, relative incompetence of that orifice. It is only when this relative incompetence occurs, or when from other causes the mitral valves fail to perform their duty, that there is any possibility of the other chambers of the heart being called upon to do increased work. Thus it is that general hypertrophy of the heart demands or is associated with eccentric hypertrophy of the left ventricle.

Time forbids that I should go more fully into this subject or do more than point out that relative incompetence

of the auriculo-ventricular valves is more frequently found at the post-mortem than it is diagnosed during life. Relative incompetence, therefore, is not necessarily indicated by the presence of a murmur.

I cannot here enter fully into the histological nature of hypertrophy, although perhaps as a pathologist it might be expected that I should say some words upon this point. I will only say that while one can, in certain cases of hypertrophy, make out clearly that the individual fibres have undergone a definite increase in size, it is far more common to note, and of this there can be no doubt, that there has been an actual numerical increase in the fibres. This increase appears to be general throughout the ventricular wall and is possibly, nay probably, due not only to a new growth beneath the endocardium especially, but also to a splitting up or division of pre-existing fibres. It must be remembered that the heart muscle fibre is not a single cell, but is a compound, the result of a fusion of several cells into one individual unit. As a consequence of this it is possibly more easy for the fibres to split up into independent territories without undergoing temporary derangement of function than is the case with the cells of those tissues formed of isolated cell units.

To pass on now to certain aspects of this subject of hypertrophy more immediately in connection with this evening's discussion, I would point out that of the cases of hypertrophy without valvular lesion, we have to consider in the first place increased resistance through the column of blood. This could be brought about by increased amount of blood to be propelled, or, in the second, by increased resistance to passage in the arterial system. Of these two the first may exist as a constitutional condition, but the more one studies the less assured does one become that there is such a condition as general plethora unless these case be regarded as true plethora in which (as in German beer drinkers) there is oft repeated flushing of the circulation with imbibed fluid. Of increased resist-

ance in the arterial stream the reverse would appear to be the case, and with further studies of blood pressure in the arteries one begins to see that this plays an extremely important part. The hypertrophy following upon not only gouty conditions and senile artero-sclerosis, but also upon acute rheumatism, chorea and chlorosis may be present with or without lesion of the aortic or mitral valves of sufficient intensity to explain its extent; so that in all these cases we have to fall back upon increased blood pressure as a cause of hypertrophy.

Increased blood pressure in itself is capable of setting up a vicious circle of which one segment may be hypertrophy.

In the first place it leads to an increased nutrition of the walls of the arteries, increased nutrition leads to increased connective tissue growth of the walls, the increased fibrous tissue of the walls leads to contraction and increased rigidity of those walls, the increased rigidity leads to increased resistance to the passage of the blood current, the increased resistance required increased propulsive power on the part of the ventricular muscle, that is to say, increased work; the increased work of the heart leads to overgrowth and hypertrophy, and with this, heightened blood pressure and further increased nutrition of the walls. And now at last the stage is reached, this vicious circle continuing, in which either the walls give way or the heart.

The longer I study the pathology of the circulation—and during the last eight years I have given more time and thought to this than to any other branch of my subject—the more assured do I feel that increased blood pressure alone (however it be primarily brought about) is sufficient to explain the anatomical changes so constantly seen in arteries, valves and heart walls, without of necessity calling in chronic inflammation or specific agency. The changes I refer to are arterio-sclerosis, atheroma, and general fibroid thickening of the valves. Perhaps here again I am diverging from the main subject of this evening's discussion, but I say this as a connecting link with what I have just remarked and with what is about to follow.

While I am far from wishing to indicate that this is to be regarded as the sole cause of atheromatous and arterio-sclerotic changes, I hold that the changes I have mentioned can one and all be explained by the increased pressure within the vessels leading to an increased passage of fluid from the blood into the sub-endothelial layers of the intima, to an increased nutrition, and as a consequence to a proliferation of connective tissue in this region, which in itself as it contracts cuts off its own supply of nutrition, degenerates, and what is more, leads to degeneration of surrounding parts by cutting off their nutrition. The evil effects in arterio-sclerosis, with all its combined lesions, are not necessarily of an inflammatory origin.

Let us take now the hypertrophied heart. Time permits me to refer but briefly to the anatomical changes that may occur in it in the cases before us.

1. The overgrowth of the arterial walls may be associated with an increased tendency to the development of fibrous tissue in the immediate neighbourhood of the arteries, and thus a condition of so-called interstitial myocarditis may be set up; or

2. With an increased fibrosis of the arteries the narrowing of the channel may lead to incomplete nutrition of the territory supplied by each arterial twig, and as a consequence the muscle fibres at the periphery of the territory may be atrophied through lack of nutrition and be replaced by fibrous tissue. This is the so-called dystrophic sclerosis of the French school, and can frequently be seen more especially in the papillary muscles.

3. With the arterial disturbance there may be actual blocking of the atheromatous arteries, and so infarctous areas may originate, may undergo softening, may cause rupture of the heart or aneurism of the wall, or if the period of softening be successfully tided over, the replacement of the necrosed tissue leads to cicatricial development and disturbance of the normal contraction.

All these cases here mentioned inevitably cause interrup-

tion to the proper action of the remaining fibres and lead towards a final failure of the organ.

Another set of causes would seem to act along rather different lines, not so much of disturbances in the coronary arteries as disturbance in the quality of the nutrition, whereby the heart muscle tends to undergo fatty degeneration. In the uncomplicated case of hypertrophy, without valvular lesion, however, this fatty degeneration is rare; more frequent, according to the observations of Renaud, Browicz and Von Recklinghausen, there is a tendency for a sudden rupture of the heart fibres, from segmentation or fragmentation. It would seem as though, from the very careful observations of the last two, the weakened condition of the muscles permits some slight increase in the work done by the organ to bring about, not a local rupture, but a generalized separation of the fibres.

Possibly this segmentation may explain the suddenness of many cases of death in those with atrophied and dilated hearts. For my own part I cannot as yet see that it has been proved with absolute satisfaction that the fragmentation of the fibres is agonal or pre-agonal. Nor, looking back, does it seem to me that the most strongly marked cases that I have encountered of this fragmentation have been in cases of sudden death.

Lastly, to round off this paper, it is necessary to say a word concerning the hypertrophy that follows pericardial adhesion. Of this I may say that I cannot recall any case seen by me in which the hypertrophy was not markedly eccentric. Most frequently the hypertrophy has disappeared with, in its place, peculiarly extensive degenerative change.

EMPYÆMA.*

By J. G. Scott, M.D., Ottawa.

The pleura, like all other serous sacks, is liable to a variety of diseases, but we will confine ourselves to that known as empyæma or purulent pleurisy.

Empyæma is a collection of pus in the pleural cavity. Modern bacteriological investigation has almost conclusively determined that this progressive suppuration is due to the irritation of pyogenic bacteria and their products.

In pleurisy proper, or the non-purulent form, there is plastic and serous transudation, with formation of new tissue, but in the purulent variety, or empyæma, there is in addition, as Hare puts it, "a progressive shedding of embryonal endothelial elements which, with the migrating leucocytes and other formed elements of the blood, constitute the pus of the exudate."

From the nature of the pleural cavity, being a shut sac, it naturally follows that the admission of these bacteriological elements into the pleura, except in penetrating wounds, must be secondary to other pre-existing disturbances having pyogenic organisms or bacteria.

Causes.—The causes, then, of empyæma are bacteria, whether admitted from without through penetrating wounds of the pleura, or from within by contamination through the lungs, tissues or blood.

Empyæma may begin as a non-purulent exudation, and not being absorbed go on to suppuration and pus formation. It may be the result of accident by which the pleura is wounded from without, or by the injudicious use of a dirty instrument in aspirating the chest. It may be a complication of scarlet fever, or any other of the exanthems, of puerperal fever, pneumonia, pyæmia, etc.

Dr. Matas, in *Hare's Therapeutics*, recognizes four differ-

* Read before the Clinical Society, Ottawa, January, 1895.

ent kinds of empyæma depending on as many kinds of pyogenic bacteria, but it requires a bacteriologist to differentiate them according to this classification, and he, recognizing this fact, has further classified it according to the character of the exudate into four divisions, which may be detected by an ordinary observant student of medicine:

1. *A fibrino-purulent exudation*—This form has a large quantity of fibrin in suspension, either as flocculi or pseudo-membranes. It has a slightly greenish tinge. This form is characteristic chiefly of infantile empyæma and empyæma complicating pneumonia. I think many cases of so-called unresolved pneumonia are empyæmas of this class.

2. *A sero-purulent exudate*—The exudate may be turbid greenish, creamy colour or, if mixed with red blood corpuscles, of a chocolate colour. This form is found in empyæma of the infectious diseases or the contamination of ordinary pleurisy by an unclean instrument.

3. *The putrid or gangrenous variety* (recognized by their odour and appearance)—This form occurs in empyæma of puerperal fever, etc.

4. *The tubercular form*, which is not so easy to recognize, from the character of the exudate resembling the pus of a cold abscess. This is generally determined by the condition of the lungs being found as a complication of tubercular phthisis.

I believe we might add another form and call it a mixed form, where the character of two or more seem to blend together to form one.

Symptoms—It may be acute or chronic. The symptoms of the acute differ very little from those of acute non-purulent pleurisy. There are usually chills, pain in the side, short, dry, hacking cough, hurried respiration, and as the fluid increases dyspnœa occurs; there is dryness of the skin, rapid pulse, elevated temperature, ranging from 100° to 105°. The digestive organs are also deranged, anorexia, furred tongue, bowels irregular, sometimes constipation, sometimes diarrhœa.

The chronic begins in a somewhat similar manner to the acute, but in a few days the fever abates, except in the evening, when the temperature is raised, but not usually very high. Sometimes there is a vast collection of pus and still the temperature remains but a degree or two above the normal and persists for months, and sometimes under the same circumstances no chills occur. Anorexia is most marked.

Physical signs.—There is œdema of the affected side, and usually later on œdema of the lower extremities. Diminished movement on the affected side, dulness on percussion, enlargement of the side, displacement of neigbouring organs, especially the heart, almost entire absence of breath sounds, but depending on the amount and consistence of the fluid and consequent compression of the lung; but a positive diagnosis can alone be made by puncturing with a hypodermic needle or aspirator and withdrawing some of the fluid. And here I would remark that some of the plastic exudation or flocculi may block the needle and prevent the flow, but by using the stillet this can be remedied; this has happened with me several times.

Course and terminations.—Empyæma usually occurs on one side, but sometimes on both. One of my cases was bilateral of the tubercular variety.

It is claimed that once in a while the pus becomes encysted and reabsorbed. I never met with a case of this kind and I think they must be exceedingly rare. The usual course would be, if the surgeon did not interfere, a continuation of all the symptoms until either nature in her warfare with disease would predominate and a fistulous opening into the bronchi or through the chest wall occur and give exit to the pus, or more frequently the disease would triumph and the case go on till the wasting would become so extreme that the patient would sink from gradual asthenia.

Prognosis—In the first and second variety the prognosis is favourable, unless complicated with some serious disease, diabetes, Bright's disease, etc.

In the third form the prognosis is more doubtful. In the fourth variety I would never operate unless for the relief of symptoms, or unless the disease that caused it was in the incipient stage, for otherwise it must necessarily be fatal.

It is claimed, however, by Matas, Widal and others, that the pulmonary lesions in the early stage appear to be arrested by the removal of the pleural exudation.

Treatment—Matas beautifully expresses it when he says, "With the recognition of pus in the pleura the pharmacological resources of medicine must retire to the background and the aggressive intervention of surgery must dominate in the treatment."

The treatment must have for its object the removal of the pus, the prevention of a re-accumulation and the restoration of the parts to as normal a condition as possible. Osler has written an article on the natural cure of empyæma by fistulous opening.

It is true that cases do occur where the constitution will withstand the disease until nature, ignoring the surgeon, accomplishes what he should have at least assisted her in doing weeks if not months before. It is true that serious diseases do sometimes get well of themselves and the constitution be restored to its normal condition; but are we to fold our arms and wait for weeks, or perhaps months, and run our chances of such a result? It seems to me a very puerile way of doing things. As well might we wait and not interfere till nature has removed completely a sequestrum that has been thrown off from a diseased bone. I have seen two cases recover in this way, one by fistulous opening into the bronchi, and one of local necrosis of the pulmonary pleura. They were cases that had lasted for weeks and weeks before they came under my notice.

Some cases are reported as recovering after simple aspiration the first time, especially in children, but I have never seen it. I invariably in children aspirate, then wait a few days, and if it refills, as it has always done in my

cases, operate at once. In adults as soon as I detect pus I operate at once, having learned something from my first case.

I believe the secret of success is to operate early, keep the cavity clean and the wound open until all discharge ceases and use antiseptic precautions, although the latter is not indispensable. In my cases very little antiseptic precautions were used, still I would recommend them. In operating I always use a silver-plated drainage tube, although many use rubber.

My objections to rubber are that they easily get blocked up and when the chest wall is retracting they are apt to get occluded and are harder to keep asceptic; besides, by using rubber two openings in the chest are usually required, whereas only one is required with a silver drainage tube.

In making the opening the point of election is in dispute. I selected a point about a hand-breadth from the spine between the sixth and seventh ribs with my first case twelve years ago on my own responsibility and I have had no reason to change.

Matas and Godlee lay down the rule that, in the absence of bulging and pointing prominently, the opening should be as high as the centre of the effusion, which is usually about the sixth rib, otherwise the retraction of the diaphragm being more rapid than that of the lungs is likely to close the opening.

Avoid wounding the inter-costal artery by making the opening in the centre of the inter-costal space or close to the upper border of the rib below. I did not consider resecting a rib necessary in any of my cases, but now I think had I resected a rib in my last it would have been better.

Having introduced the tube do not allow the fluid to escape too rapidly or syncope might result. Remove all flocculi or pseudo-membranes possible; wash out the cavity with warm water or sterilized water, boracic acid solution, weak solution of hydrogen peroxide, or weak solution of ac. carbolic.

Being satisfied that the cavity is thoroughly washed out, dress the end of the tube by a pad of iodoform gauze or bichloride gauze, or some such dressing, and a pad of absorbent cotton and bandage. Repeat the washing out and dressing daily until the discharge ceases, which usually lasts from two to four weeks.

Use a syphon or fountain syringe and keep the atmosphere warm and moist while dressing. Observe hygienic and dietetic treatment and give tonics and stimulants. Iron in some form is needed, for the drain on the corpuscular elements of the blood is very great, as is evident from the pale emaciated condition of the patient.

As a general thing, in three or four days the patient expresses himself as feeling very comfortable, the cough having almost ceased, the dyspnœa having disappeared, the pulse stronger, slower and more regular, the temperature normal or nearly so, appetite restored and general improvement in the patient's condition.

If a fistulous opening occurs it must be treated on general principles. It occurred in one of my cases. If an abscess forms in the muscles, as occurred in the same case of mine in which was the fistulous opening, a counter-opening in the most dependent part with free drainage, washing out the sac and firm pressure, will soon obliterate it.

A brief report of the cases that have come under my observation is as follows:

CASE I.—I read a report of this case before the Medico-Chirurgical Society of Ottawa (the society being in existence at that time), which was published in the *Canada Medical and Surgical Journal*, March, 1884.

History.—Mrs. J., aged 20, married two years; tubercular history; never had any serious illness till April, 1882, when she had a miscarriage six months after her marriage.

February 17, 1883, she was delivered of a large, healthy boy. Fifteen days after confinement I was sent for in great haste; this was my first visit. I found her with chills, headache, thirst, temperature $104\frac{3}{5}^{\circ}$, pulse 140,

tongue dry and coated and violent delirium. Septicæmia had occurred. Washed her out with 1-40 carbolic acid, introduced iodoform capsules, put her on internal treatment, gave explicit orders to the nurse; gave an unfavourable prognosis and left.

March 6, visited her again and found her much better. Chest trouble was absent till 23rd, when I found all the symptoms of effusion into the left pleura, confirmed my diagnosis by hypodermic needle. Aspirated on the 25th and drew off a large quantity of putrid matter. April 3rd aspirated again and drew off about the same in quantity and character. April 18th aspirated again with same results. Temperature was 105 at this time and a fistulous opening had formed into the bronchi.

July 14th I gave an anæsthetic, operated and introduced a silver drainage tube. She gained steadily and September 9th I removed the tube and September 18th the wound was healed. Perfect recovery. Has had five children since.

Her sickness would no doubt have been weeks instead of months had I operated when I first found purulent matter.

CASE II.—G. A., aged about six years. Tubercular history in father's family. Had pneumonia of right lung in April, 1884, which continued about three weeks, when empyæma developed. Very little increase in temperature during day, but an evening exacerbation to 102°-103°. Had night sweats, anorexia, difficult breathing, etc., and became greatly emaciated.

I aspirated and opalescent matter was withdrawn in large quantity. I waited a few days and the cavity refilling I operated.

In fourteen days I removed the silver drainage tube, a week later the wound was healed and he made a perfect recovery, with not much retraction of the side; is a strong, healthy young man to-day.

CASE III.—November, 1885, was called to see J. M.,

aged 11 years. Had been sick for about two months; was given up to die with phthisis.

I diagnosed empyæma. Had a good family history. I aspirated left side and removed a large quantity of creamy matter. It began to refill in a few days and I operated as in the others. Removed a good deal of pseudo-membranes and flocculi. Removed tube ten days after and a few days later the wound was healed. Perfect recovery.

CASE IV.—E. A., about 24 years. Had been attending him for some time for phthisis, and in December, 1885, I aspirated both sides for empyæma and removed a large quantity of creamy pus from both pleuræ. The patient was so far gone with phthisis that I refused to operate, but yielded later, and on December 29th I introduced a silver drainage tube into the left side. The patient died in a few days.

CASE V.—Annie H., aged three and a half years. Mother and sister died of phthisis. About February, 1885, had pneumonia and in March empyæma set in. I aspirated and in a few days operated and removed, with the greenish pus, an immense quantity of pseudo-membrane. I never saw as much in any two cases before or since.

Removed tube in three weeks and wound healed in one week later. Perfect recovery and healthy ever since. Since then her father died of phthisis.

CASE VI.—H. B., aged four years. Family history good. In August, 1886, had pleurisy with effusion, but was not absorbed, and empyæma developed from the suppuration of the exudate. I aspirated and a few days later operated. Tube remained in eighteen days. Wound healed a few days later and was a perfect recovery.

CASE VII.—Mrs. H. J., about 38 years, married and had five children. When I first saw her I diagnosed empyæma and operated March 1st, 1892. Removed tube 20th March. About three weeks later wound was closed. Was a good deal of retraction of side. Did her own work around a farm-house. Took measles six or eight weeks later and died of meningitis.

CASE VIII.—Miss C., about 36 years, sick for a long time with pleurisy. Came to Ottawa and I saw her February 9th, 1893. I aspirated and removed a large quantity of opalescent matter. The fluid very slowly accumulated, but was expectorating the same kind of matter. In about ten days I again aspirated, but got a good deal less. In about six or eight weeks the fluid had all disappeared. She was very slow in convalescing. This case I look on as an example of what Osler describes as "cure by local necrosis of the pulmonary pleura, exposure of the parenchyma and a soakage of the pus through the spongy lung tissue into the bronchi."

CASE IX.—F. Mc,, aged about six years, was brought to me in June, 1894. Had been sick a long time; was coughing and vomiting opalescent matter daily. Bronchial fistula had formed. Put him on tonics and stimulants. Recovery tedious but successful.

CASE X.—B. W., aged about four years. Had scarlet fever in Prescott last spring. Saw him during the desquamation stage. Had gangrenous sore throat. When convalescing returned to Prescott. In about three weeks returned and had empyæma. Operated June 16th, 1894. Removed tube about four weeks later. Abscess of muscles of back formed. Made counter-opening and drained and washed thoroughly and sac was soon obliterated. Necrosis of the ribs in contact with the tube occurred. Removed the necrosed surfaces.

A fistulous opening still remains, but I heard lately he was doing well. He has been gaining rapidly since tube was introduced. Drs. Klock and Jamieson rendered me valuable assistance in this case.

He was the most difficult patient to manage I ever had. His ribs were very close together, and I think it would have been better to have excised a portion of one rib before introducing the tube in this case. Had I anticipated necrosis I certainly would have done so.

N.B.—I swabbed out the fistulous opening with tincture of iodine and since then the fistula has disappeared and he has made a perfect recovery

NOTE ON A NEW ETHER INHALER.

By James Bell, M.D.

This inhaler consists of an aluminium cone of suitable size, made without seam or roughness, covered with stockinette, within which, on the inner surface of the cone, is placed some gauze or absorbent cotton. The advantages claimed for it are, first, that it is perfectly clean and may be sterilized as a whole by dry heat The gauze and stockinette covering are renewed for each patient. The aluminium is of course not absorbent and is malleable, so that the edges may be moulded to fit any peculiar conformation of face. It possesses the advantages of a clean folded napkin which can be sterilized before using, and which is the simplest form of inhaler, with the additional advantages of having sufficient consistence to maintain its form and shape.

We are apt to forget that ether is not a supporter of respiration, and that while we add ether vapour to atmospheric air it is of the utmost importance that we should provide for the entrance of pure air into the respiratory organs during anæsthesia. The Clover inhaler which is now so much in vogue possesses all the disadvantages which it is possible for an ether inhaler to possess. It has but one redeeming feature,—that is, it economizes ether,—a small matter when we consider the welfare of the patient. It is impossible to cleanse it. Patients go on, one after another, respiring through the same filthy mask and the same rubber bag, each one adding his quota of mouth secretions, perhaps syphilitic, cancerous or tubercular. Tubercle baccilli must frequently be deposited upon its walls and vomited matter saturates it from time to time, not to speak of the absolute impossibility of sterilizing the mouthpiece to correspond with the precautions which we take with all the other substances coming into close contact

with the field of operation. In operations upon the face, head and neck this is of vital importance. I have had many years of experience with the Clover inhaler and I am convinced that even in the most careful hands it is a dangerous instrument; needless to say it is much more so in the hands of the careless or inexperienced. It is an asphyxiating machine, and only in proportion as it asphyxiates does it economize ether. (If used without the rubber bag it possesses no advantage over the ordinary cone.) The patient respires the same air over and over again from a rubber bag, the respired air passing through a chamber containing ether in the liquid form. It is only as the ether becomes vaporized that it enters the system through the pulmonary mucous membrane and produces its effects on the nerve centres. Should the rubber bag be kept applied anæsthesia is more rapidly produced, because in addition to ether anæsthesia there is asphyxiation by carbon dioxide. The answer is made, however, by adherents of the Clover inhaler, that the patient should be allowed a breath of fresh air at every third or fourth inspiration. I reply that he should have pure fresh air at every inspiration, and if he does not it is only a question of degree of asphyxiation. I have had, as already stated, a long experience with the Clover inhaler; I have had, I am sure, very serious after results from its use. I am quite certain that in many of the cases in which the patient becomes livid, and in which the bronchial tubes become filled with frothy mucous, these results are attributable to the inspiration of impure air. These patients generally vomit after operation and are very slow to recover consciousness. Where ether anæsthesia has been produced without asphyxiation, even when maintained for a couple of hours, consciousness is rapidly regained after the administration of ether has been discontinued. The Allison inhaler and others of similar construction cannot be charged with producing asphyxia; they are simply unclean and from their construction it is impossible to sterilize them. I maintain that ether properly administered is an absolutely safe anæsthetic. Proper ad-

ministration consists in adding to pure air the greatest possible amount of ether vapour. It must never be forgotten that pure air must be inspired constantly, and that ether vapour is not a supporter of life, and also that it should, as a rule, be given in as concentrated a form as possible. Ether dashed into a cone vapourizes much more quickly than when held in a metallic receptacle. It is true that ether vapour used in this way will be diffused beyond the patient and that a large quantity of it will be wasted. This is unavoidable, and except for the item of expense it does no harm. Although ether vapour is inflammable it is only so in a very concentrated condition, and it is impossible to saturate the air of a room sufficiently to ignite it with an open light. The only danger of ignition is in the immediate neighbourhood of the inhaler.

It seems strange that with the knowledge of bacteria which has been accumulating for years and our very strict precautions, based upon this knowledge, to avoid wound infection in surgical operations, that there has not long ago been devised some means to provide an asceptic inhaler, and one which could be cleansed of the secretions and exhalations of one patient before applying it to the face of another. It is simply horrible to contemplate the use of a Clover inhaler and bag which has already been used on the face of hundreds of other patients and without any possibility of properly cleansing it, either by heat or chemical sterilization.

Retrospect Department.

QUARTERLY REPORT ON DISEASES OF CHILDREN.

By A. D. Blackader, M.D.

Professor of Pharmacology and Therapeutics, and Lecturer on Diseases of Children. McGill University.

Typhoid Fever in Children and Infants—(*N. Y. Medical Record*, March 16, 1895). By Dr. L. Stowell.—In this paper, which he designates as a clinical study of the disease as met with in young children and infants, the writer gives us a comparative study of thirty-four cases met with during the past ten years in his hospital practice, and which were diagnosed by him as typhoid fever. Tympanites was nearly always present to a slight degree, and also gurgling at the ileo-cæcal valve. Diarrhœa was present in 29.5 per cent. of the cases. A few were constipated, though loose stools usually occurred a few times before recovery. The stools in some cases are said to have answered to the "pea soup" description. Hæmorrhage of the bowel did not occur in any of his cases. In 20 (66 per cent.) rose spots appeared, usually on the eighth day; in two cases they were profuse. Most of his cases occurred during the autumn months. In duration, his shortest case lasted 10 days, the longest 52 days; in three cases there were relapses. In age the two youngest were twelve months and seventeen months respectively. Epistaxis occurred in seven cases. The temperature ran high continuously in one case; in others it was more irregular. Pneumonia occurred in three cases. Bronchitis was common.

Although enteric fever in childhood is lightly spoken of, there are many autopsies reported. Whittaker says one should be slow in childhood to accept the diagnosis of typhoid fever. Most of such cases are typhoid conditions of pneumonia, tuberculosis, etc. And Meigs and Pepper

say that the mildness of the disease in childhood may be due to the glands of Peyer being less fully developed than in the adult. Nevertheless we have undoubted cases of death occurring from this disease, even in the earliest days of life. Bednar records a case of an infant five days old presenting typhoid symptoms and dying on the seventeenth day. Ernst reports an infant born of a mother suffering from enteric fever. The child died on the fourth day. The spleen was enlarged, and the blood of the heart showed typhoid bacilli. Eberth has also demonstrated typical bacilli in the organs of four fœtuses aborted by mothers having typhoid fever. In the Montclair epidemic of 1894, due to infected milk, eight infants developed the fever. Dr. Stowell draws the following conclusions from a *resumé* of all reported cases : (1.) The disease is common in childhood and not more rare in infancy than is explained by lack of exposure. (2.) The types and varieties do not differ materially from those of adults. (3.) The duration is shorter because the tendencies in childhood favour growth and repair more than in the adult. (4.) The prognosis is better in children, but in early infancy it is high.

In the discussion which ensued, Dr. Northrup asserted that from his experience as Pathologist to the New York Foundling Asylum, where he had more than 2,000 autopsies on children, he considered that typhoid fever was not a disease affecting infants under two years of age. The diagnosis of typhoid fever must rest on the same points as in the adult, but spleenic enlargement could only be diagnosticated in the infants, when the spleen could be felt below the free border of the ribs, and enlarged mesenteric nodes, swollen Peyer's plaques and solitary follicles, with enlargement of the spleen, were not infrequently met with in autopses on infants whose clinical history would exclude typhoid.

On Cardiac Irregularity in Childhood.—(*Zeitschrift für Klinische Medicin*, December, 1894 ; *The Practitioner*, February, 1895.)—In a very interesting paper, Professor

Heubner discusses the importance of this symptom. Some authorities, he says, maintain that it is never met with except in tubercular meningitis ; others consider it as a mistake to regard it as an indication of either brain or heart disease, while a recent writer expresses the opinion that the pulse is more often irregular in children than in adults, and that, without influence from disease. In dealing with the subject, Heubner excludes from his consideration at first, those cases where the phenomenon is due to tubercular meningitis and pronounced cardiac inflammatory infection. The remaining cases he classifies as follows : 1. The simplest and most obvious are those where irregularity is met with after poisoning. Instances are recorded as occurring during convalescence after large doses of stramonium, digitalis, and opium. 2. Closely allied are cases of disturbed rhythm from digestive troubles. Arythmia is not an uncommon occurrence in the dyspepsia of children, and is probably due to a form of auto-intoxication. Heubner mentions, as an example, the case of a child, six years old, suffering from gastric disorder. Cerebral symptoms arose, vomiting, irregular intermitting pulse, retraction of the head, drowsiness and pyrexia. It was regarded as a case of auto-intoxication, and the diagnosis was confirmed by the favourable issue, and the appearance of acetone in large amount in the urine. In another case a slow unequal heart-beat appeared under similar conditions. 3. Cardiac irregularity may be met with in abdominal affections, where no grounds exist for regarding it as due to poisoning. A case of appendicitis is mentioned in a girl of eight years, in whom decided intermittency of pulse was present. 4. Arythmia may be observed in the course of the infectious diseases ; (1) during the development and height of the disease ; (2 during convalesconce. The first form is comparatively rare ; the second form is more frequently met with, especially after diphtheria ; it is also occasionally noted after scarlet fever, measles, and croupous pneumonia, and a case is recorded where the symptoms set in late after typhoid fever. 5. The occurrence of irregu-

larity in the pulse has been observed in anæmic, nervous and excitable children. It may be noticed also in weakly rachitic children, and may give rise to the diagnosis of meningitis. Arythmia and palpitation have also been observed in thin rapidly-growing children during the school period. 6. Intestinal parasites are said to cause cardiac irregularity, but the writer has had no experience of it. 7. It may occur under certain physiological conditions Emotional states may produce it; it has been observed during sleep; and it occasionally follows a warm bath. 8. Da Costa describes an idiopathic form in which the children appeared otherwise quite well. Heubner in discussing the mode of occurrence of arythmia under these various conditions, refers many of the cases to an irritation of the cardiac centre. This is the explanation in tuberculous meningitis where increased pressure on the cranial vault affects the centres in the medulla. Where the irregular action is due to poison, we must assume a specific action either on the nerve centres or upon the heart muscle. The cause of its presence in rapidly-growing anæmic children is uncertain, but the suggestion that it may be due to a relatively small arterial system is founded upon experimental evidence. The appearance of irregularity in chronic cardiac disease has been observed by Heubner only in the stage of insufficiency. The treatment of cardiac irregularity in childhood demands a very careful consideration of the possible etiology, which must be combated.

On Cardiac Asthenia in Children Suffering from Infectious Diseases.—(*Le Progrès Médical*, December 22, 1894; *The Practitioner*, February, 1895.) By Dr. Sevestre.—The author remarks that infectious diseases of the adynamic type are much less frequent in children than in adults, and that in typhoid especially it is not uncommon to see the disease run its course in the child, without presenting the asthenic symptoms which characterize it later in life. Nevertheless, even when there are not the usual signs of adynamia, cardiac asthenia frequently occurs. It may supervene

rapidly and unexpectedly, but in general, symptoms of cardiac weakness may be foreseen. In the most severe form, cardiac asthenia may appear as a suddenly fatal syncope; generally, however, the attack after having lasted a few seconds disappears, leaving the patient weak and collapsed; the pulse rapid, irregular and compressible; the heart's action hurried and tumultuous and the impulse almost imperceptible. On auscultation the sounds are feeble and dull, the two sounds being almost indistinguishable, either by their tone, or by the unequal duration of the long and short silence. Sometimes this condition ends in death; more frequently the symptoms subside; but even though consciousness completely returns, the pulse remains shabby, and the heart sounds indistinct. In a milder degree, cardiac asthenia shows itself in cold extremities, slight cyanosis, and modification of the heart sounds and the pulse. Such symptoms deter him from employing the cold bath in infantile typhoid. While observation of the temperature may be important, frequent examination of the heart is not less so, both from the diagnostic and therapeutic point of view, The mechanism of heart failure is not simple. Alteration of the cardiac muscle plays an important *rôle*, but diminished arterial tension is another important factor, and it is only by keeping these two points in view, that a rational and effectual treatment can be instituted. As a tonic for the heart the author strongly recommends caffeine; and to increase arterial tension in some cases the use of normal saline solutions administered subcutaneously.

On the Nature of Gastro-Enteritis in Infants.—(*The Lancet*, February 16, 1895).—In a short editorial, attention is called to the result of examination of the blood of infants suffering from gastro-enteritis, conducted in Prof. Epstein's clinic in Prague. It is stated that in fifteen cases of gastro-enteritis, in which the blood was examined during life, the presence of micro-organisms was definitely ascertained in twelve. Staphylococci, streptococci, bacteria coli commune,

bacilli pyocyanei, and bacteria lactis aerogenes, all of which are known to occur in the intestinal contents, are mentioned as having been found in the blood of such infants, while in only two out of thirty apparently healthy children were any cultures obtained, and of eleven dyspeptic infants only one yielded any results. It is pointed out that this fact may explain the inefficacy of our therapeutics in some cases, while the variety of the organisms found may account for the multifarious character of the symptoms in this disease.

On the Early Diagnosis and Treatment of Whooping Cough.—(*Journal des Practiciens*, January 14, 1895).—In this article by M. Vignol, the symptoms by which an early diagnosis may be arrived at are discussed. The attack of stridulous laryngitis which sometimes appears at the beginning is comparatively rare, and seems to be peculiar to the patient rather than to the disease. Grinding of the teeth and sneezing are symptoms which may occasionally have a signification. Redness of the conjunctiva may be early noticed in catarrhal cases, and may exceptionally be associated with photophobia. The only true guide, however, to a diagnosis lies in the characteristics of the cough itself, which are somewhat subtle but rarely absent. After a catarrhal period of two or three days' duration, a peculiar cough sets in, which is not convulsive, but in which the nervous element can be detected. It is more frequent at night, sometimes exclusively nocturnal. There are no physical signs at this time in the lungs, and there is no expectoration. This lasts two or three weeks, during which its nervous character becomes more pronounced, and finally the distinctive cough sets in. It is very advantageous, if possible, to recognize the disease in the early period of its invasion and isolate the patient. Antispasmodics, the writer thinks, still form the basis of our treatment. Of them, he prefers belladonna and bromide of potassium. In addition, he recommends the diffusion of some antiseptic through the air of the apartment. Among

other methods of securing this, he recommends the placing of a ball of camphorated naphthalene under the child's pillow.

On the Use of Salophen in Children's Diseases.—Drews, of Hamburg, (*Allgemeine Medicinische Central Zeitschrift*, November, 1894,) recommends the use of salicylic acid and its salts, claiming for it a milder action and less liability to the production of unpleasant effects such as nausea, tinnitus, and collapse. It is also more readily taken. In fifteen cases of acute rhumatism in children, varying from 7 to 14 years of age, he gave it in doses of from three to five grammes per diem with good results. In three or four days pain and fever had subsided. It proved of great service also in acute muscular rheumatism of the neck muscles, and in a case of chorea in a girl of 13 years in whom a slight cardiac murmur was present. From his experience with it, Drews concludes that salophen may, with much confidence, be used in the rheumatic diseases of children, and will form also a useful antipyretic and antineuralgic.

On the Employment of Naphthalin in the Treatment of Oxyurides in Children.—Jahrbuch für Kinder Leithunde, Vol. xxxix., Nos. 2-3, *Therapeutische Wochenschrift*, February 17, 1895.) By Aurel Schmitz, M.D.—As naphthalin is a powerful antiseptic and germicide, and undergoes almost no change in passing through the bowel, Professor Ungar, of Bonn, more than a year ago, advised its use as a remedy in this very troublesome affection. The writer reports his experience with it in the treatment of forty-six cases suffering from oxyurides. His method of employing the drug is as follows :—After the bowels have been thoroughly cleansed by means of a mild purgative a dose (two grains for a child of one and a half years up to six grains for a child of 12 years) is given midway between meal hours, mixed either in a little sugar or in a capsule. This is repeated twice daily till four doses have been taken. Then a pause of eight days is made and, if necessary, the

course is repeated. A third course may be given after an interval of fourteen days. It is very important that during the administration of the drug, fat as far as possible should be withdrawn from the dietary, as its presence favours the absorption of the drug. If there be constipation, mild purgatives should be given after each course. With these precautions, he says, the drug is well borne. In twenty-six of the forty-six cases treated one course proved sufficient. The writer thinks that, given in this way, naphthalin is less dangerous than santonin.

Papain as a Remedy for Tœnia.—(*The Medical News*, October 6, 1894.—In a letter Dr. Bartholow, of Philadelphia, mentions the successful use of papain in a case of *tœnia solium*. The remedies most successful in the expulsion of this parasite are so nausoeus, and to young children often dangerous, that any drug free from these objectionable features should have a trial. In the case related by Dr. Bartholow, after the unfortunate host (an adult) had tried successively the various remedies ordinarily employed, and met only with disappointment, he was placed temporarily on papain, taking ten grains three times a day after meals. After a few days, segments in considerable numbers were passed. A terebinthinate preparation was then given, which had previously quite failed, and was followed by a dose of castor oil. Vomiting apparently was the only result, but within twenty-four hours an immense *tœnia solium* was passed complete, coiled up upon itself and motionless. Dr. Bartholow thinks it possible that the papain exerted a toxic influence on the parasite.

Reviews and Notices of Books.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Volume 1., Diseases of the Uropoietic System. New York: William Wood and Company. 1895.

This is the first volume of what promises to be one of the most complete and elaborate works ever published on general medicine. The list of contributors contains many of the leading authors and investigators on both sides of the Atlantic. In the present volume the diseases of the kidneys (both medical and surgical), prostate, male urethra, female bladder and urethra, and of the urine itself are dealt with.

Dr. Delafield is the author of the article on the disease of the kidneys. It is a painstaking contribution. Pathologically Delafield's classification of Bright's disease into numerous groups may be right; clinically however, it will prove, we believe, to be of no advantage, rather a disadvantage to the general practitioner. With this exception the article is, however, a very valuable one. Reginald Harrison, of London, writes on the surgical diseases of the kidneys and ureters, and on diseases of the bladder. Upwards of two hundred pages are devoted to these subjects. It is scarcely necessary to add that the distinguished author has presented his subjects in a very full and complete manner. We know of no more valuable contribution to these subjects in the English language.

Dr. G. F. Lydston, of Chicago, describes diseases of the prostate and male urethra. Hurry Fenwick writes on the diseases of the urine, including under this name hæmaturia, pyuria, accidental albuminuria, cystinuria, phosphaturia, oxaluria, polyuria and chyluria. Diseases of the female bladder and urethra are dealt with by Howard A. Kelly, of Baltimore. This is a very original and complete account of these diseases.

The volume on the whole is made up of what may be called

monographs on the various subjects. The endeavour to present the last and most complete knowledge has been, as far as we are able to judge, very successful. The illustrations are numerous and good.

The volume certainly reflects credit on all concerned—writers. editor and publishers.

Enlargement of the Prostate, Its Treatment and Radical Cure. By C. W. MANSELL MOULLIN, M.A., M.D., Oxon., F.R.C.S.; Surgeon to and Lecturer on Physiology at the London Hospital; late Radcliffe's Travelling Fellow and Fellow of Pembroke College, Oxford, and Hunterian Professor at the Royal College of Surgeons. London: H. K. Lewis, 136 Gower street, W. C. 1894.

This is the most complete and up to date monograph on the anatomy, pathology and treatment of enlarged prostate that exists at present. The author has taken up each part of the subject and dealt with it in a clear, practical and thorough manner. While it cannot be said to contain much that is new, yet the whole subject is here presented to the reader in a complete and attractive form. The subject is such an important one to every general practitioner, as well as the general surgeon, that it should be in the library of all physicians and surgeons.

Mr. Moullin is probably quite right when he favours early diagnosis and the surgical treatment by removal of the offending portion, in selected cases, before the so frequently occurring secondary changes in the ureters, kidneys and heart have become sufficiently far advanced that any operative measures must be undertaken as a *dernier ressort.*

We hope that the book will be well received and carefully studied.

Dose Book and Manual for Prescription Writing. By E. Q. THORNTON, M.D., Ph. G., Demonstrator of Therapeutics, Jefferson Medical College of Philadelphia. Saunder's New Aid Series. Philadelphia. 1895.

In this manual we have an excellent instructor in the knowlege necessary to write prescriptions correctly. Consideration is first given to the various weights and measures recognized by the Pharmacopœia, and the details of the metric system are

fully explained and compared with the apothecaries' weights. The details of prescription writing are then described, and the difficulties of the Latin Grammar are made easy for those who are unfamiliar with it. The principles which should underlie the combination of drugs, the several forms of incompatibility, dosage, and the various methods in which drugs may be administered are fully explained and illustrated, and a table of solubilities is given. The last chapter contains a list of all the official drugs and preparations, with the minimum and maximum dose as generally prescribed. We can imagine such a book to be of much assistance to students and junior practitioners, and to such we cordially recommend it. The price is extremely moderate. A.D.B.

Statistique et Observations de Chirurgie Hospitaliere. Par Dr. POLAILLON, Chirurgien l'Hotel Dieu; Professeur Agrégé à la Faculté de Médecine de Paris; Membre de l'Académie de Médecine. Paris: Librairie Octave Doin Éditeur, 8 Place de L'Odéon.

In this volume is collected and presented to the reader the large surgical experience of the author during fourteen years in one of the largest clinical fields in Paris. The statistics are regional and give much valuable information concerning the class of cases found in a large city hospital. The results of treatment with and without operation are clearly and concisely stated. It is worthy of perusal, and valuable information may be obtained from its careful perusal.

Surgical Asepsis. By CARL BECK, M.D., Surgeon to St. Mark's Hospital and to the New York German Poliklinik, etc. Pp. 306. Philadelphia: W. B. Saunders. 1895. Price, cloth, $1.25.

This manual is thoroughly practical, giving the theory and principles of aseptic as opposed to antiseptic surgery. The technique described is that which should be carried out, not only in the well-equipped modern operating-room, but in the patient's private residence. The practitioner who undertakes the most minor operation, and the student entering on his career will read this little volume with profit, for in it he will find described everything that is necessary for the treatment of wounds at the present day. The illustrations are excellent, the type is large and the style is easy.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, February 22nd, 1895.

G. P. GIRDWOOD M.D., PRESIDENT, IN THE CHAIR.

Discussion on Hypertrophy of the Heart Apart from Valvular Disease.

Dr. JAMES STEWART introduced the subject by a paper on the etiology. (See April number of this JOURNAL.)

Dr. ADAMI discussed the anatomy and experimental pathology. (See page 811.)

Dr. F. W. CAMPBELL described the treatment, which will be published next month.

Dr. MCCONNELL thought the point insisted upon by Dr. Adami, that all the changes occurring in cardiac hypertrophy were the result of increased tension, was the essential one to keep in mind in considering its pathology. There were a great many causes which might bring about increased tension. Dr. Stewart mentioned many, probably most, but had not, he thought, laid sufficient stress upon the effect of poisonous substances circulating in the blood—the result of improper oxidation, or even of bacterial growth, especially in the gastro-intestinal canal, producing auto-intoxication. These often were the most important factors in giving rise to increased tension. Arterio-sclerosis and cardiac hypertrophy, as for instance in Bright's disease, especially that form known as "contracted kidney," were essential. Anæmia and chlorosis, Dr. McConnell thought, were also often accompanied by hypertrophy and dilatation where there was increased tension. They had a tendency to produce increased resistance in the peripheral blood vessels, causing hypertrophy and dilatation of the heart, the latter owing to the lessened nutritive qualities of its blood supply. Many of these

cases seem to depend on deficient action in the gastro-intestinal tract with auto-intoxication, and the increased tension may depend on changes in the capillaries and arterioles owing to the glandular functions of these endothelial cells being exercised in eliminating morbid matter from the blood. In the condition called lithæmia, also, the products of deranged metabolism led to increased tension. It was almost impossible, he believed, to separate dilatation from hypertrophy, as they so often occurred together, Lung affections also, emphysematous conditions, even chronic bronchitis or sclerotic changes, as in fibroid phthisis. by giving the right heart more work to do, were apt to cause hypertrophy. Even obesity might act as an etiological factor, and phenomena of a purely neurotic origin often tend to bring about this condition. He had a case of tachycardia not long before in which the whole trouble seemed to be of a neurotic character, and it became almost chronic tachycardia. There was no organic trouble, but a certain amount of hypertrophy resulted, then imperfect compensation followed, succeeded by heart failure and death. Dr. McConnell thought that murmurs following relative incompetence might be mistaken for valvular disease.

Regarding the treatment, he believed it must vary as the cause varies. Sometimes he would lessen the action of the heart, sometimes increase it, but the most important feature of the treatment was likely to be the clearing of the blood stream of all poisonous or extraneous matters which might be the cause of increased tension by promoting the action of the chief emunctories and lessening the amount of fluid in the body. Baths play an important part in this latter respect. A recent writer who studied the action of baths at Nanheim, Germany, in valvular disease, known as Schott's disease, believed they diminished the size of the heart by peripheral dilatation of the vessels, besides increasing the sink transudation. Brine baths, carbonic acid baths, and hot baths were all employed for this effect.

The patient came out with a skin as red as a lobster, and the area of hypertrophy and dilatation as determined by percussion was sometimes reduced as much as one inch as the result of a single bath.

Dr. FINLEY thought too much stress might sometimes be laid upon arterial sclerosis as a causative factor in the production of cardiac hypertrophy; that it might sometimes be a secondary rather than a primary condition, although, with the sclerosis once established, a vicious cycle was set up, in which enlargement of the heart and sclerosis produced and kept up each other. He believed, however, that some cases occurred in which the cardiac trouble was the primary one. Cases of aortic regurgitation were not uncommon in young people where a considerable degree of arterial sclerosis existed. In Graves' disease Dr. Adami seemed to think that the enlargement of the heart was due to increased arterial tension; now, in these cases the arterial tension was low. It seemed to Dr. Finley that the cardiac changes that occurred in Graves disease might be the result of the increased work thrown on the heart by the increased number of pulsations. As to the symptoms of cardiac hypertrophy, one may say there were none. It was when dilatation supervened or when compensation was defective that symptoms occurred. They were, of course, similar to the symptoms following mitral disease when compensation was failing. All kinds of pulse were met with in this condition; sometimes weak and irregular like the advanced stage of mitral stenosis; sometimes in pairs, one weak and one strong; and the few cases of brachycardia and tachycardia seen by Dr. Finley were associated with this condition. He regretted that physiology had not been able to do more to clear up this subject; so far experimental work had thrown very little light on the irregularity of the pulse. Touching the treatment, he believed it a good rule to divide the cases into two classes, (1) those of high tension, (2) those of low tension. In the first the object should be to decrease tension, and iodide of

potassium was often very useful in relieving distressful attacks of palpitation; nitro-glycerine had its uses, and purgatives, especially mercurial, followed by a saline in the morning, were of very considerable value. For the purpose of relieving sleep and distressing dyspnœa, nothing equalled morphia. The other hypnotics, such as sulphonal, chloral, paraldehyde, often failed. In the second class attention should be directed towards strengthening the heart and giving the ordinary cardiac tonics.

Dr. LAFLEUR, seeing that Dr. Stewart had exhausted the etiology of the subject, would content himself with reading a tabular statement of cardiac hypertrophy in general. It was based as follows: (1) Causes within the heart: these were practically two; (a.) myocarditis, however induced, either sclerotic, or that which is the result of chronic pericardial inflammation; (b.) aneurisms, which by weakening one portion produced hypertrophy in others. (2.) The second great division included causes outside the heart; among these were noted; (a.) purely mechanical causes, and of these the principal and only one was in reality adhesion of the pericardium, synechia pericardii, which might or might not be combined with pleural adhesion; (b.) a great number of causes which depended upon the raising of blood pressure. Here the distinction might be made of blood pressure raised in territorial areas, or a general increase of blood pressure; among the former were chronic or subacute nephritis, chronic pulmonary diseases, chronic bronchitis, sclerosis of the lung, and true chronic fibroid phthisis. Still dealing with territorial raising of blood pressure, we had the pressure of tumours upon large vascular trunks (quite a rare cause, but it might occur in mediastinal disease). Then the general raising of blood pressure, as brought about by poisons of various kinds; by excessive manual labor; nervous derangements; and arterial sclerosis. (3.) Hæmic plethora. This was not infrequently combined with arterial hypoplasia. Dr. Lafleur remarked he had access to some statistics which showed the proportion in

which these various causes come into effect, drawn from 360 autopsies, representing the total number of autopsies from the opening of the Johns Hopkins Hospital, May, 1889, to April, 1893. In 360 autopsies, cardiac hypertrophy, due to some cause or another, was found to exist in no less than 105 cases. Of these arterial sclerosis was found to be the cause in 59% ; chronic nephritis in 13.4% ; valvular lesions, 12.4% ; adhesions of the pericardium in 7.6% ; excessive muscular work in 3.8% ; tumours, 1.9% ; aneurisms in 0.95% ; hæmic plethora in 0.95%. It was seen from this paper that more than 50% of the cases of cardiac hypertrophy in general hospital work was due to arterial disease. The frequency therefore of arterial sclerosis had certainly been underestimated. The speaker knew it to be extremely common in the United States, and, from all reports, it was so upon the continent of Europe. He agreed with Dr. Adami that dilatation, in the vast majority of cases, accompanied hypertrophy. Concentric hypertrophy was almost always a post-mortem change. An observer (Corvisart) during the time of the " reign of terror " in France, records that persons guillotined were noticed in the post-mortem rooms to have firmer contracted hearts with small cavities ; showing that the apparent thickening of the wall was due to strong rigor mortis. Dr. Lafleur wished to know if he had understood Dr. Adami rightly when he stated that in general arterial sclerosis the connective tissue change in the intima was the initial point ? He, himself, had been accustomed to consider that the essential primary condition was a degeneration of the media, and that the connective tissue change was really a reparative process, such as was seen in all cases of sclerosis. This latter, at all events, was the view of Councilman and Thoma. The vicious circle, alluded to, was especially marked in those cases of arterial sclerosis accompanied with hypertrophy ; why it should be particularly so in general arterial sclerosis was easily understood when we considered the enormous number of vessels involved. Not only the systemic, but the pulmonary circulation was

affected in these cases, and the disease of the later reacted on the right heart just as that of the former did on the left. The prognosis was especially bad in cardiac hypertrophy with dilatation when it occurred in cases of general arterial sclerosis. Dr. Lafleur remarked in connection with the treatment that he thought Dr. Campbell should have been justified in protesting when asked to discuss the treatment of cardiac hypertrophy, because after all hypertrophy was a conservative process, and therefore beneficial. Allusion was made to Oertel's treatment of hypertrophy. That treatment had not found the favour here that it had in the old country. Some very stringent remarks have been passed upon it. One writer declared that a large number of people who have not cardiac disease, will be cured by it and the few who followed it, and really have the disease, will be killed. The speaker wished to add his testimony in favor of local and general bleeding in cases of hypertrophy from arterial disease. That and hydragogue purgatives were the only means we had. He had seen one case where bleeding certainly saved the man's life. The man was completely comatose, and was rapidly approaching his end, when he had him bled to the extent of 18 ounces ; he was at work upon his farm two months later.

Dr. BLACKADER, in considering the treatment of the various forms of cardiac hypertrophy, held that much importance must always be given to the etiology ; without clear ideas on this point we would certainly fail to obtain all the relief for our patient which was practicable. In some cases temporary rest of the body in the recumbent position formed an important therapeutic measure. We secured for the heart a comparative rest, also, by limiting the amount of fluids taken into the stomach, and in this way lessening the amount absorbed, and the total volume of blood to be moved. In the diseases of no other organ would a due consideration of ordinary physical laws give so much assistance in treatment. In another series of cases disturbed innervation seemed to play an important, role, either affecting the cardiac nerves and producing over-

action, or acting on the minute arterioles, producing an increase in arterial tension, and thus adding to the work of the heart. Such cases might receive much benefit from the careful use of nerve sedatives, such as the bromides, or chloral hydrate. Both these drugs, but especially the latter, had a direct action on the cardiac and vasomotor nerves, while at the same time they overcame the insomnia and general restlessness which in many cases were prominent features.

While recognizing fully the value of the various therapeutic measures mentioned by Dr. Campbell for the relief of the later stages of the disease, when we had to deal with a failing heart Dr. Blackader thought that attention had not been sufficiently called to the necessity of recognizing and treating the earliest condition in which there was a pure hypertrophy of the heart muscle. For treatment such cases might be grouped into two classes, (1) those in which the chief trouble, for the time being, lay in over-action of the heart muscle; (2) those in which the principal difficulty was undue contraction of the arterioles. And to meet these conditions we had two drugs which would, properly employed, give efficient assistance. The first was aconite, which acted directly on the heart, lessening its force and frequency, and had comparatively little action on the vascular system. The second was a solution of either sodium nitrite or nitro-glycerine. Both of these acted directly upon the small arterial vessels and had almost no action upon the heart, and by them arterial tension could be lessened. If good results were, however, to be obtained, it was necessary to secure a steady action of the drug, praying due regard to the time required in its elimination. Aconite was eliminated comparatively slowly, and in order to maintain an even action it should be administered about every six hours. With the nitrites it was different, they were eliminated rapidly, and to maintain their action in the vessels the dose should be repeated at least every three hours. The ordinary routine method of administering

them two or three times a day was very defective and in most cases proved useless.

Dr. WILKINS mentioned a case which occurred recently in his practice which tended to establish high arterial tension as the cause of cardiac hypertrophy. The woman had been under his care for the last three years. She first complained of difficulty of breathing on the slightest exertion. Examination showed the lungs normal, slight enlargement of the heart, with increased accentuation of the second aortic sound. This led him to examine the urine. He found there sometimes slight traces of albumen, at other times albumen was entirely absent, but the urine was always of low specific gravity. During the last few months she suffered intensely from agonizing paroxysms of shortness of breath. They would seize her in bed, the face become pallid, the limbs cold, yet notwithstanding this the pulse was one of high arterial tension. Examining the lungs during these paroxysms breathing sounds were at first normal, later on some few râles might be heard, but at no time sufficient to account for the dyspnœa. One naturally inquired what could be the cause of the dyspnœa. He thought it must be due to a spasmodic condition of the pulmonary vessels, and this spasm was an indication of the condition of the vessels throughout the rest of the body. The spasm must be the result of some poison circulating in the blood. Already medical men were discussing the nature of this poison. Bright when treating of kidney disease spoke of the enlargement of the heart which was present in many cases. Some few years later Dr. George Johnson, of King's College, wrote a very interesting article upon this condition of thickening of the coats of the vessels in kidney disease, and described it as one of hypertrophy of the muscular coat. He thought the hypertrophy was due [illegible] thickening of the capillaries which supplied nouris[illegible] he body. Then came the demonstrations of B[illegible]rd and Claude Bernard. Johnson afterwar[illegible] his opinion as to the hypertrophy being du[illegible]n in the capillaries; he then thought it to

be due to a spasmodic condition of the muscles of the blood vessels, which contracted with a view to prevent impure blood from passing into the tissues. Now, this latter theory would account, Dr. Wilkins believed, for the conditions present in his patient. That there was a spasm there could be no doubt, but the cause of the spasm might be a question—whether it was a reflex or a contraction induced by the direct contact of an irritant upon the muscles of the vessels, was a subject still under dispute. Most authorities at the present day were inclined to believe that the blood itself acted directly upon the muscular substance of the coats of the arteries and in that way prevented the passage through of the blood containing poison. Gaskell wrote an article upon the influence of irritants upon the muscular substance of the vessels and the heart; and he said that it was not necessary for the nervous system to be connected with the muscles in order to produce rhythmical contraction of the coats. An apparent objecton to this theory was the fact that one would sometimes see spasms of the muscular coat producing epileptiform convulsions in one person and in another some different condition; and again, if these irritating materials were all the time circulating, why were not the spasms continual? That was explained by the fact that in the body are found poisons of directly antagonizing effects. A couple of years ago a murder trial had taken place in New York in which some expert demonstrated the presence of morphia salts in the blood or stomach, and Dr. Vaughan, of Ann Harbour, was able to prove in court that substances could be obtained from the body having the same action as that of morphia, and that it was impossible to distinguish between the reactions of some of these poisons derived from the body and those of morphia. Some recent observers mentioned that poisons of an irritating nature could be obtained from the urine, which poisons were capable of producing tonic seizures. They said even that morning urine would give poisons differing from those of the urine of the evening. Considering all this, it did not take much to make one believe the possibility of

poisons existing in the body which were able to produce a narcotic action at one time and at another time a spasmodic action, or at one time the coma of kidney disease and at another the spasms of such conditions as were under discussion. In the vegetable kingdom the poppy produced medicines which were narcotic, and also medicines which were tetanic in their effects. It therefore required but little stretch of the imagination to believe that the blood contained materials which at one time might produce tonic spasmodic effects and at another time the opposite condition. For treatment, he believed in cases of kidney trouble the great thing was to lower the tension. Many cases would be found in which all treatment failed to reduce the quantity of albumen in the urine until the arterial tension was lowered, and the moment that was effected the albumen diminished, the pulse improved and recovery supervened. On the other hand, in a case where the tension remained high (somewhat acute cases with large kidneys), even though the albumen diminished, the course was likely to be towards chronic Bright's disease.

Dr. MILLS said that Dr. Lafleur and Dr. Finley in their remarks had apparently assumed that the condition of the arteries in the lungs might be the same as in other parts of the body. A recent discovery in physiology was of prime importance to the subject under discussion, that is that the vessels of the lungs were innervated like the systemic arterioles. This discovery explained why the right heart was invariably found full and distended in asphyxia, while the left was empty and contracted. If contraction of the pulmonary arterioles was assumed, it was easily understood why these phenomena occurred. Dr. Mills thought that the present views held with regard to the nature of blood pressure were far too simple and would have to be modified in favour of some more complex theory. He thought blood pressure could no longer be regarded as the mean result of the cardiac impulse and peripheral resistance.

THE

Montreal Medical Journal.

VOL. XXIII. MAY, 1895. No. 11.

MEDICAL FACULTY OF McGILL UNIVERSITY.

The past session of this Faculty has been a most successful one, the number of students being larger than ever before, and the quality of the work done being in no wise inferior to that of previous sessions. The fear that the increased length of the course would deter intending students from taking it has proved a groundless one, for although the time of attendance has been increased from twenty-seven to thirty-six months, the freshmen class numbered over one hundred members, a proof of their appreciation of the efforts of the Faculty to provide a full and complete course of medical education and of their own anxiety to fit themselves for their life's work as thoroughly as possible.

The new buildings and laboratories, for which the College is indebted to the generosity of Mr. John Henry Molson, were in active use during the session and proved an inestimable advantage to the proper conduct of the work. The large class-rooms, the well provided laboratories, the private rooms for the professors, all add to the comfort and well-being of both teacher and student and consequently better work was done.

We publish an account of the annual convocation from which the details of the work of the session may be gathered.

SIXTY-SECOND CONVOCATION OF THE MEDICAL FACULTY OF McGILL UNIVERSITY.

The annual convocation for the conferring of degrees in medicine at McGill University was held on Thursday afternoon, April 4th, in the William Molson Hall. Sir Donald Smith, the Chancellor, presided, supported by the Acting Principal, Dr. Alex. Johnson, on his right and Sir William Dawson on his left. The platform was occupied by members of convocation, while the graduating class and their friends occupied the body of the hall.

The Rev. Dr. Clark Murray opened with prayer, and the Dean then read the report of the examinations, showing that the number of students enregistered in the Faculty during the past session had been 401, and of these 53 has passed the examinations and fulfilled the requirements to entitle them to the degree of M.D., C.M., from the University.

The Chancellor presented the medals and prizes to the winners, and then the graduating class were duly "capped" by Dr. Johnson, the oath being administered by Dr. Ruttan.

Dr. Adami, on behalf of the Faculty, addressed the graduating class. (See page 801.)

Dr. Hargrave delivered the valedictory as follows:

Mr. Chancellor, Members of Convocation, Ladies and Gentlemen, and Fellow Students.

Another session has just come to a close, and, in accordance with the time-honored custom, we, the members of the graduating class of '95, desire to address a few words of farewell to our professors, fellow students, and friends who have favored us with their presence this afternoon. And although, strictly speaking, this is about all that should find a place in a valedictory address, we trust we may not appear too radical, should we deviate from this somewhat limited field, in order to give expression to some ideas, that may be of interest to most of us, and which have originated mainly in our experience during four sessions of our college life.

Our career as medical students, has been associated with one of the most interesting epochs in the history of our University. We cannot therefore, in the few moments at our disposal, give expression to all that deserves mention. Many interesting events must be omitted entirely, whilst others may receive only a passing notice. And whilst an effort will be made to confine our remarks to subjects of general interest, we trust, that under the present circumstances, we may not be regarded as having committed an unpardonable breach of the laws of good taste, should we occasionally refer to matters that concern more particularly our own circle.

It was in the autumn of 1891, that we first assembled in one of the class-rooms of the medical building, to listen to the opening lecture of the session, and also to words of welcome from our respected Dean. There were in our number representatives from every province of the Dominion. At that time we numbered ninety-five ; to-day we number fifty-three. Our former occupations being so different from the new work we had undertaken, considerable time had to be spent before we could break away from old associations, and become thoroughly at home in our changed environment. Modes of thinking, which, perhaps to some extent, had become stereotyped through lack of proper stimulus, had to be overcome, in order to make way for the knowledge we were seeking. And now, if we were to ask ourselves, what was it that induced us to take up the study of medicine, the answer, in most cases, might be embodied in the two following statements—first, the wide and varied field of study, embraced in a medical curriculum ; and secondly, the true dignity of the profession itself.

This is not the place to go into a detailed account of the rise and development of medical science, yet by briefly stating the condition of affairs in the early centuries, by giving two or three landmarks, we may be better able to appreciate the results of modern research.

From the state of society pictured by the early writers,

and the reference made to the "healing art," we would be led to infer that the science of medicine was not unknown to the people. No doubt the practice of the science in the early ages was largely in the hands of astrologers and influenced a good deal by religious superstition. For instance, on the pillars of the temples of Æsculapius there were recorded the cures of the maladies of which the votaries of the "god of healing" were supposed to have been suffering. But it is not till the time of Hippocrates that we come upon anything like a system of medicine. The knowledge of anatomy, physiology and morbid processes in this school was no doubt limited, but the records of individual cases and of epidemics of disease were valuable productions. The influence of this school can be traced to Alexandria. Later on the science was taught in Byzantium; and this brings us near the time when the Arabian school of medicine flourished and of which Avicenna was the chief representative.

Thus in tne early centuries we find the development of medical science confined to a few important centres. Here and there we come upon individuals filled with a love for research, endeavouring to carry out their investigations amidst the greatest opposition. But they were as faint lights, striving to pierce the darkness. They were impeded in their efforts by the superstition of the age and no doubt were considered fortunate if they escaped the fury of the populace, or did not bring down upon them the displeasure of the church, and a reward similar to that meeted out to Vessalius, whose only sin was an unrestrained love for post-mortem investigation.

This slow development of science may be accounted for to a great extent by the slavish devotion shown to the scholastic philosophy of the age; but back of this lay the influence of the church. The alliance between the Vatican and the schools had been so intimate that those who threw off the dominion of the former could no longer continue to recognize the authority of the latter. The church was the

dispenser of knowledge, and generally she taught that which best served her own purpose. The tendency was to exalt philosophy, whilst the more *practical* branches of learning were neglected. The followers of Plato did not fail to speak disparagingly of almost every branch of science, inasmuch as the sciences tended to draw the mind away from the contemplation of higher things. Lord Macauley speaking of the philosophy of the earlier centuries says, "It could not condescend to the humble office of ministering to the comfort of human beings." The spirit of the age was opposed to anything practical or scientific, and therefore very few far-reaching results in the way of bettering society are traceable to this period.

With the revival of learning a new order is instituted. But as this expression indicates only one phase of the change, it is better to speak of it under the wider term Renaissance. This period, drawing the curtain over the last of the middle ages, marks the emergence from ecclesiastical and feudal despotism. It developed what was original in mediæval ideas and was the embryo of the modern world. It was about this time, too, that Bacon arose with his new philosophy. The watchwords of his system were "utility" and "progress." It was further developed by Lock, and his influence can be traced even into the social problems of Voltaire and Rousseau in connection with the French Revolntion. And still later we come upon it in such men as Leibnitz and Priestly.

In this practical turn that had been given to learning in general it is only reasonable to expect some good result in the field of medicine.

In the 17th century Harvey made his great discovery, whilst the present century has been marked by still greater triumphs. As a matter of fact, any development that took place in the other sciences reacted in a beneficial way upon our own particular branch. Some of the most important discoveries in medicine are due to researches in other sciences, notably chemistry and bacteriology. Medicine

furnishes one of those marked instances in which the other sciences have lent their influence towards improving the condition of man. It is an instance in which almost all the sciences have met upon a common platform, each contributing its share towards the diagnosis and treatment of disease. And we cannot speak too highly of the promoters of these branches of learning and of those who have done so much to advance the glory of our profession.

In reflecting upon the part such branches as these of which we have been speaking take in the province of medicine, we cannot but admit that the subject is a broad and varied one. It is not only necessary for the practitioner to be acquainted with those subjects that belong to medicine proper, but he must also be familiar with other subjects bearing upon his own particular branch, if he is to treat his patients intelligently and successfully.

But we were also induced to enter upon the study of medicine because of the dignity of the profession. This remark might come with more grace from some other than ourselves, but to-day we claim a little indulgence. We estimate the dignity of the profession by the aim it has in view in lessening suffering. A science that has done so much for humanity, that has striven to bless and elevate man, must surely commend itself to us. One of our modern writers speaking on the recent progress of medical science pays a high tribute to the aim of the profession. "She has restored eyes to the blind and hearing to the deaf; she has lengthened life, she has minimized danger, she has controlled madness, she has trampled on disease."

Besides this grand work the science has accomplished, it has also indirectly exerted a wholesome influence over our *minds* whilst engaged in mastering its truths. The good we have acquired in this respect will depend very much upon the way we have approached our subject. If our aim has been merely the massing together of facts, without even any regard to the order in which they have been compiled and stored away, we have to a large extent

laboured in vain and spent our strength for naught. If a disease were in all cases characterized by the same symptoms, evidently our proper course would be the mastery of those symptoms. But inasmuch as diseases are often abnormal in their symptomatology, it is necessary to cultivate accurate observation, and by a process of deduction endavour to arrive at a rational diagnosis. If we have not used our advantages with this end in view we must acknowledge we have failed to recognize one of the most essential features in a medical education. We do not mean to belittle the acquisition of facts. They are necessary, and during the last month we have been made quite conscious of this. But the man who has laid fast hold upon general principles and learnt to apply them has acquired an education and discipline far superior to that obtained from the mere mastery of facts. We trust we have in this respect caught the spirit of the teaching that has been imparted to us.

Besides being a means of discipline, the study of medicine has had a wonderful influence upon us, in shaping our views of life generally. Being so different from any subject we had previously investigated, it has exerted a benign influence upon the other kinds of knowledge we had already acquired. The former tendency of our minds has been turned into new channels, and we believe the little world in which we had lived, has expanded its borders. The views of life we had held were perhaps, in some respects, a little stern, and inflexible. These have been toned down, under the humanizing influence of our study. In some cases the very foundations were at fault. And thus by a two-fold process—by removing the unsafe elements, and building in the breach—we trust we have succeeded in causing the different factors to blend more harmoniously. And now, if anxious souls should fear, that with the advance of medical science, there is to be a corresponding dissolution of the moral order among medical students, we can assure them, if our experience goes for anything, we

have found the tendency of medical study, elevating and ennobling. And, we do really believe it possible to follow the study and practice of medicine without becoming very extreme evolutionists, that it is possible to attend lectures on this subject without doing any great violence to our conscience, that it is possible to discuss medical subjects in our medical society without feeling any baneful influence, that it is possible even to attend medical dinners and still continue to be *upright*.

The advantages that McGill offers in the way of acquiring a practical knowledge of medicine are by no means insignificant. The recent addition to the medical building, opened during the month of January, with its class-rooms and laboratories, has increased the comfort of professors and students, and given better facilities for practical instruction. The increased hospital advantages too, have given us a better opportunity of becoming acquainted with the clinical part of our course. Our only regret is that we have not had more time to make use of these privileges. We realize that this has been the most important part of our work, and we therefore congratulate those students who may receive all the advantages arising from the lengthened course of study. It may be possible to speak eloquently of heart murmurs, râles, and crepitations, as obtained from text books, but the only true knowledge of these can be obtained from examination of the patient. We may fail to retain all that has been imparted unto us in the lectures, but " that which we have heard, which we have seen with our eyes, which we have looked upon, and our hands have handled," in the wards and clinics, are the facts which have made an impression upon us.

It would be an evidence of ingratitude, should we fail to speak more particularly of our sojourn in the hospitals during the last two sessions. The Royal Victoria Hospital, situated as it is at the base of the mountain, and towards which the unfortunate may look with hope, is an institution complete in every respect. We cannot describe it

better than in the words of Holy Writ, "it is perfect and entire, wanting nothing." Here we have been led into all the mysteries of nervous diseases; and have witnessed operations performed in a masterly way. We have also found that in virtue of the good hygienic conditions existing in and around this worthy institution, there is a marked tendency towards spontaneous cure. So much so, that the lame and halt are not often seen within its doors. As a consequence, a small museum has been constructed, in which splints, extension apparatus, and old operation tables are to be kept—souvenirs of former surgery, and silent monuments to the triumphs of sanitary science. The Directors have happened upon a most novel yet very practical way of *fencing of* infection or of inducing the "red line of demarcation." So that now they are enabled to say to any advancing septic inflammation, or spreading gangrene, and to a great many other things, too numerous to mention, "thus far shalt thou come, and no farther." We wish the Royal Victoria Hospital every success.

It is late in the day to announce that the Montreal General Hospital is being entirely renovated; so we can only extend our congratulations on the thoroughness with which the work has been carried out. It was here we received our first clinical instruction. By a careful process of exclusion we were taught to diagnose the different forms of disease,—a method that has since often been the means of saving our reputation. Here, too, we have beheld the scalpel wielded by a *strong arm*. Yet we have seen that this fact is by no means incompatable with skill and dexterity. And the demonstrations being supplemented by lucid explanations, caused the seats in the "gods" to be as much in demand as those in the "dress circle." We feel certain that so long as this institution is presided over by such men as at present, the "Old General," as it is familiarly spoken of by former graduates, will continue to do a worthy work.

With such advantages as these McGill should give a

very practical course in medicine, and cannot surely lay herself open to the charge that John Ruskin makes regarding the current mode of teaching. "On the whole," he says, "and looking broadly at the way the speakers and teachers of the nation set about their business, there is an almost fathomless failure in the results. The main thing which we ought to teach our youth is to see something—all that the eyes which God has given them are capable of seeing. The sum of what we do teach them is to say something." By the use of the microscope we have been taught the normal condition of tissues, and also the changes in morbid conditions. We shall not readily forget the practical demonstrations in the anatomy room, nor the vivid illustrations drawn in red, and white, and blue, and yellow, and setting forth, as the case may be, the relations of the arch of the aorta or the distribution of the cervical plexus. In chemistry and physics we have been taught something of the forces of nature, both in the lecture theatre and in the laboratory. In organic chemistry we were told that, being in possession of one of the lower members of a series, we could with almost absolute certainty predict what the next higher substance should be. "There are theories and there are theories," but for once we realized we were in possession of one that might be operated. As a consequence, that which we had been accustomed to look upon as a heterogenous mass of facts, useful chiefly as a means of burdening the memory, soon became reduced to law and order, and the subject was looked upon as one of the most interesting in the curriculum.

But the time has come when we must say farewell and turn our faces towards a different phase of life.

We thank you friends and citizens of Montreal for the interest you have manifested in us this afternoon. We thank you for the courtesy you have on more than one occasion shown us, and for all your efforts to make our stay in your fair city a pleasant and prosperous one.

We are at a loss to find suitable words to address to you students with whom we have toiled. So we must ask you to let the friendship and goodwill which has previously existed between us, be a truer index to our feelings on this occasion than any words we can utter. We thank you for your co-operation in every movement pertaining to the good of the College and our mutual welfare. We shall watch your career with interest, and our wish is that all your efforts may meet with success. Some of you are now to step into the places we have vacated. We trust you may fill them more worthily than we. And now that the restraining hand has been withdrawn, and you left to your own council, we trust you may be delivered from all the dangers that beset your important office. Above all, we hope you will bear in mind and put in practice the good principles *we* have always endeavoured to impress upon you.

To you, our professors and teachers, we must also say farewell. As men you have impressed yourselves upon us. You have given us freely of your knowledge and your experience. When in unknown regions, and the fog very thick around us, we have found you reliable pilots. When we have sought your counsel, you have given it freely. You have always listened to any reasonable request we had to make; and not only by your words, but more by your actions, you have manifested a deep interest in our welfare. You have assisted in fostering in us a love for our profession, and the breadth that has characterized your teaching has done much to save us from narrowness or prejudice. We ask you to accept our sincere thanks for all you have done for us. For ourselves, we pass "among new men, strange faces, other minds," but the words you have spoken to us, and the associations of the last four years, will be treasured in our memories in years to come. This day marks an important event in our lives, looking as we do back into past and forward into the future. We do not mean to indulge in mere sentiment or pietism in making these statements. Our only wish is that our career

may never bring dishonour upon our profession or University.

The present event recalls a scene pictured in one of Tennyson's idylls, and which we cannot refrain from quoting. King Arthur is speaking of the manner in which he received his Knights into the Order of the Round Table:

> "I made them lay their hands in mine and swear
> To reverence the King, as if he were
> Their conscience, and their conscience as their King."

So, in being admitted to this Order this afternoon, our desire is to be made more conscious of the obligations we take upon ourselves. It is true we cannot by our efforts rid ourselves of the debt we owe to our University, but we are willing to devote our time and labour in promoting her glory. It may be an unworthy offering, but it is the best we can bestow; and if it be expression of honest hearts we feel it will not be lightly esteemed by you. Our parting hope is that our professional career may always be marked by a true sense of duty; for in this way we may best prove ourselves worthy sons of our Alma Mater.

Dr. Craik then summed up the work of the session as follows:

Sir Chancellor, Mr. Vice-Principal, Members of Convocation, Ladies and Gentlemen,

The interesting Ceremony which we have this day witnessed, by which fifty-three gentlemen have received their Degrees in Medicine and have been declared worthy to practice Medicine and Surgery in all their branches, marks the culmination of the Sixty-Second session in the history of this Faculty.

In its ordinary features this Convocation differs very little from those which have preceded it. We have brought before you a goodly array of worthy Graduates, in no sense inferior to those that have gone before them, and, we may fairly hope, even better equipped than they in the most modern ideas and methods, and you, Ladies and Gentlemen, and many warm friends who are not with us to-day,

have again helped and encouraged us by your countenance and assistance.

Of the 53 Graduates upon whom the degree of Doctor of Medicine and Master of Surgery has just been conferred, 21, or about 40 per cent., are from the Province of Ontario; 16, or about 30 per cent., from the Province of Quebec, and 16, also about 30 per cent., from other provinces and countries, including New Brunswick, Nova Scotia, Prince Edward Island, Manitoba, the West Indies and the United States.

The number of Graduates in successive years varies considerably from time to time, and bears no direct ratio to the number of Students in attendance during the same year. The number of Graduates this year is smaller by two than it was last year, and greater by seven than the year before; but calculated from a series of years the number is fairly proportionate to the average number of Students.

The area also from which our Graduates and Students are drawn is tolerably constant and is steadily widening in every direction, bearing a somewhat close relation to the total number of our Students. And this total number of our Students has been rapidly increasing, particularly during the later years. Twenty years ago the number was 129; ten years ago it had risen to 227; four years ago it was 261, and this year it is 401.

Of the 401 Students who have been in attendance this year, 155, or about 39 per cent., were from the Province of Quebec; 115, or about 29 per cent., from the Province of Ontario; 93, or about 23 per cent., from the Maritime Provinces and Newfoundland; 26, or about 6 per cent., from the United States, and 14, or about 3½ per cent., from the North-Western Provinces and Territories, the West Indies and Ireland.

It will thus be seen that about 61 per cent. of our Students and 70 per cent. of our Graduates have come from homes outside of the Province of Quebec, and at least an equal percentage of them will eventually establish them-

selves in practice outside of this Province. It is only necessary to state these facts to make it obvious, how great would be the misfortune of having our Curriculum or the scope and breadth of our teaching, narrowed and controlled by local and selfish cliques, or by antiquated and anti-academical Legislation.

We think we may fairly claim that to this breadth and progressiveness of our teaching and the earnestness with which it has been carried out, much of the success of our Faculty has been due. Progressive thoroughness has always been our aim, and in order to attain to it and to maintain it, we have not hesitated to adopt new methods,—even when we could ill afford the expense and the labour,—whenever their utility had been well established; nor have we hesitated, on the other hand, to cut off from our educational tree branches which had become obsolete and useless and which, if not removed, could only lead to decay and unfruitfulness, blighting, sooner or later, the very life of the tree itself.

In this world, and particularly in this age and in this country, stagnation in educational, as in business matters, will not long be tolerated. The public is quick to detect and quick also to condemn everything that is offered to it that is not the best and the freshest of its kind, and the Faculty or the Firm which offers to the public of to-day products fashioned after the models or methods of the last century, or even sometimes of the last decade, is apt to meet with neglect and failure. On the other hand, the Firm or the Faculty which strives to provide for the real wants of the public, and in forms suitable to its tastes, will not long have to complain of neglect or lack of appreciation.

I will not say that our Faculty has always lived up to this ideal, but it has always striven after it. We have made our mistakes and we have had our shortcomings, but when we have discovered them we have been prompt to remedy them, and we have never hesitated between a present loss and future failure.

But I would not have it thought that in thus referring to some of the sources of our success as a Faculty, I have even for a moment been forgetful of the magnificent gifts and endowments which we have received at the hands of our Chancellor, Sir Donald A. Smith, and our Senior Governor, Mr. John Henry Molson, and many other generous friends of the Faculty and of the University. The present enviable position of our Faculty is largely due to these ample and timely gifts, and the Faculty will never cease to be grateful for them; but I trust I may be forgiven if I venture to say that these gifts might never have been given, if the Faculty had not been doing its utmost to achieve success without them, and that our benefactors, like Providence, take delight in helping those that are striving earnestly to help themselves.

As a natural result of the generous benefactions which have been bestowed upon us, and also of the advanced ideas and methods of Medical Education which we have always striven to maintain, the present Session has been carried on under exceptionally favourable circumstances. The Students in attendance have increased since last year by no less a number than 51, or nearly 15 per cent.; the working capacity of our Buildings and our Laboratories has been nearly doubled, and the Royal Victoria Hospital, with its perfect equipment now in full operation, has more than doubled in extent and completeness our field for Clinical Instruction.

On the 8th of January last our new Buildings and Laboratories, erected from the ample fund contributed by Mr. John Henry Molson, were Officially Declared Open in an eloquent Address by His Excellency the Governor General, who was accompanied by Her Excellency the Countess of Aberdeen, and in the presence of a very distinguished company, composed of citizens of Montreal and other friends of the University from every part of Canada and from the United States. We had the pleasure also of listening to an able and learned Address from our dis-

tinguished Graduate and friend, Professor Osler, of Johns Hopkins University, Baltimore, and appropriate Addresses were also given by Sir William Dawson and the Acting Principal, Professor Johnson.

I shall not detain you by a detailed description of the new and commodious Buildings and Laboratories which were formally opened on that occasion, and which have been in active use throughout the session. Such a description will be found in our Annual Calendar, but I may say that they include a new Lecture Room that will seat comfortably more than 450 students, with adjoining Preparation Rooms and Commodious Laboratories for Physiology, Pathology, Histology, Pharmacology and Practical Hygiene. This increased accommodation in the New Buildings has enabled us greatly to improve the departments in the older buildings. The Chemical Laboratory and the Anatomical Rooms have been nearly doubled in extent; a suitable Faculty Room has been established, the Professors and Demonstrators have nearly all been provided with comfortable rooms, the Students' Reading Rooms have been greatly enlarged and improved, and increased space has been given for the enlargement and improvement of the Library and Museum.

But not only has the Faculty been overcrowded for many years, as to Space, but owing to the gradual expansion of its Curriculum, and the greater development of its practical methods of teaching, it has also gradually been becoming overcrowded as to Time; for it is no more possible to compress into four sessions of six months each, even with the addition of an extra three months summer session, work that would fully occupy the time of five or six sessions, than it would be to crowd our 400 students into a space only sufficient for a little more than two-thirds their number.

And yet that is the very thing that we have been trying to do for many years, and which most Medical Schools of the better class are still trying to do. The original

Medical Session only lasted from three to four and a half months in any one year, and our Faculty was among the first, if not the very first on this continent to increase it to six months. This system, with its long vacations, was the outcome of the Apprentice system which was in vogue even as late as my own student days, and which gave our Preceptors and Masters the benefit of our private services during a large portion of every year ; but since the old system of private instruction and apprenticeship has been superseded by public hospitals and clinical instruction, the long vacations have become useless to students and practitioners alike, and the necessity for their continuance has passed away.

It had been apparent to our Faculty for many years that four six-months sessions were insufficient for the work that was being crowded into them, and as long ago as 1870 an optional summer session of three months was established for the purpose of relieving the somewhat turgid winter session. A second summer session has been practically introduced for some years, but even this was found to be insufficient, and we found ourselves, therefore, face to face with the problem, of either adding another year to our course of study, imposing, of course, an additional burden upon the students and their parents and guardians, or of utilizing to the utmost the long vacations, imposing thereby some additional labour upon our teachers, but giving to the students the benefit of time which hitherto has been largely wasted. It was plain to us that the latter alternative was by far the best, and at the close of the last session, in 1894, with the immediate prospect of largely increased laboratory extension, and the additional clinical field to be covered, the time seemed opportune for giving effect to our ideas and wishes, and the time-honoured, but seemingly obsolete, Six-months session was abolished, and an annual session of Nine Calendar Months was established to take its place.

The advantages to be looked for from this change are

many and great. Besides those already mentioned, it has the great advantage of giving our students thirty-six months of Academical Instruction instead of twenty-four, or at most twenty-seven as formerly ; and when the great superiority of Systematic Academical Teaching in College and Hospital over the old vacation system of irregular private instruction, or, more often, no instruction at all. is taken into account, the advantage of the change in this respect must be obvious to all.

The change was made, not without some misgivings as to the effect upon the numbers of our students, and we were prepared to see diminished classes for a year or two; but, as in the case of most other movements that have been made for the advantage of the students, they were the first to appreciate it, and our numbers. instead of diminishing, have this year been much larger than ever.

The changes in the *personnel* of the Faculty during the year have only been such as were rendered necessary by our altered conditions. Professor Roddick asked to be relieved from the duties of the Chair of Clinical Surgery, retaining only the General Chair of Surgery. Associate Professor James Bell was made Professor of Clinical Surgery, and Dr. George Armstrong was made Assistant Professor in the same Department. Dr. F. G. Finley was made Assistant Professor of Medicine and Clinical Medicine, and Dr. Henry A. Lafleur became Assistant Professor of Medicine and Lecturer in Clinical Medicine. Dr. Wyatt Johnston was also made Lecturer in Bacteriology.

In addition to the foregoing, which were University appointments made by the Board of Governors, the Faculty also made some additions to the staff of Demonstrators and Assistant Demonstrators, raising their number to 13, making, with the Professors and Lecturers, a total Teaching Staff of 36 individuals.

I had the pleasure last year of reporting the gift to the Faculty of a portrait of Dr. Robertson, the original Founder of our School. This year we have had the pleasure of

adding to our Collection of Portraits that of the late Professor Archibald Hall, who, from 1835 to the time of his death in 1868, a period of 33 years, took a prominent part in the work of the Faculty, and contributed to its success in no small degree by his industry and talent, both as a Writer and Taeacher, and for many years in the responsible position of Registrar. The Portrait is the gift of his daughter, Mrs. Rebecca Jones, to whom the Faculty takes this opportunity of acknowledging its obligation.

Did time permit, and were this a fitting occasion, there are other matters connected with our Faculty and its work, which might well claim our attention, but I have endeavoured to confine myself chiefly to such aspects of our work, as might serve to show its educational value and the principles upon which it is being carried on.

On behalf of the Faculty, I may say in conclusion, that while we rejoice in the success that has come to us, and are deeply grateful for the gifts which have contributed to it in so large a degree, we are at the same time fully conscious of the great and continued responsibility which these gifts and this success impose upon us, and we shall leave no effort untried to prove ourselves worthy of the trust.

The Chancellor briefly addressed the assembly, congratulating the graduating class and prize-winners and thanking all for their attendance.

The pronouncing of the benediction by Rev. Dr. Murray brought the proceedings to a close.

Report on the Medical Faculty of McGill for the Session 1894-95.

The total number of students enregistered in the Medical Faculty during the past Session was 401, of whom there were from :—

Quebec	155	Prince Edward Island	16
Ontario	115	North-West Territories	2
New Brunswick	36	Manitoba	3
Nova Scotia	37	West Indies	4
United States	24	British Columbia	4
Newfoundland	4	Ireland	1

The following gentlemen, 53 in number, have fulfilled all the requirements to entitle them to the degree of M.D., C.M., from the University. In addition to the primary subjects, they have passed a satisfactory examination, both written and oral, on the following subjects: Principles and Practice of Surgery, Theory and Practice of Medicine, Obstetrics and Diseases of Women and Children, Pharmacology and Therapeutics, Medical Jurisprudence, Practical and General Pathology and Hygiene,—and also Clinical Examinations in Medicine, Surgery, Obstetrics, Gynæcology and Ophthalmology, conducted at the bedside of the hospitals:—

Alexander, C. C.	Fredericton, N.B.
Allen, J. H., B.A.	West Osgoode, Ont.
Anderson, D. P., B.A.	New Liverpool, Que.
Anthony, X. L.	Berwick, N.S.
Bailey, J. W., B.A.	Northfield, Minn.
Basken, J. T.	Dunrobin, Ont.
Beatty, E. D.	Nepean, Que.
Bishop, C. W.	Montreal.
Blow, T. H.	South Mountain, Ont.
Boucher, R. B.	Peterboro, Ont.
Bouck, C. W.	Inkerman, Ont.
Chapman, H. J.	Port Elgin, N.B.
Commins, M. E., B.A.	St. Stephen, N.B.
Cowie, W., B.A.	Montreal.
Cruikshank, A.	Inverness, Que.
Day, J. L., B.A.	Montreal.
Ellis, W. L.	St. John, N.B.
Feader, W. A.	Iroquois, Ont.
Flinn, J. W.	Montreal.
Fox, C. H.	Oxley, Ont.
Gallant, St., C. J.	Charlottetown, P.E.I.
Gleason, J. H.	Cowansville, Que.
Grant, J. P.	New Glasgow, N.S.
Gun, A.	Durham, Ont.
Hamilton, R.	Bright, Ont.
Hargrave, I. L., B.A.	Rosedale, Man.
Harwood, R. deL.	Vaudreuil, Que.
Hogg, L., B.A.	London, Ont.
Hogle, J. H.	Montreal.
Kerry, R. A.	Montreal.
King, J. H.	Chipman, N.B.
Knapp, H. T., B.A.	Sackville, N.B.
Lauterman, M.	Montreal.
MacLeay, A. A., B.A.	Danville, Que.
May, G. F.	Montreal.

Merrick, J. H.....Merrickville, Ont.
McKinnon, N.....Park Hill, Ont.
McNally, G. J.....Upper Kingsclear, N.B.
Neill, R. W.....Aylmer, Ont.
Oliver, W., B.A.....Rockburn, Ont.
Price, B. S.....King's Co., N.B.
Quay, D. D.....Port Hope, Ont.
Reilly, W. G.....Ottawa, Ont.
Robertson, J. E.....Morrisburg, Ont.
Saunders, E. H.....Woodstock, Ont.
Shaw, H. M.....Berwick, N.S.
Vipond, C. W.....Montreal.
Walker, D. F.....Huntingdon, Que.
Watson, J. H., B.A.....Barbadoes, W.I.
Wickham, W. W.....Summerside, P.E.I.
Williams, J. A.....Carleton Place, Ont.
Wood, D. M.....Kenmore, Ont.
Wright, H. K.....Montreal.

The following gentlemen, 76 in number, have completed their PRIMARY EXAMINATIONS, which comprise the following subjects: Anatomy, Practical Anatomy, Chemistry, Practical Chemistry, Physiology, Practical Physiology, Histology and Botany :—

Argue, J. F.....Carp, Ont.
Bonnell, S.....N. Sydney, N.S.
Burrell, R. H.....Yarmouth, N.S.
Church, C. H.....Montreal.
Curran, T. J. J.....Montreal.
Crockett, A. D.....Fredericton, N.B.
Donahoe, M.....Cardigan Bridge, P.E.I.
Drum, L., B.A.....Quebec, Que.
Dyer, A.....Montreal.
Edwards, A. F.....Thurso, Que.
Fraser, A. D.....Hawkesbury, Ont.
Foster, A. L.....Ottawa, Ont.
Foster, G. M.....Pembroke, Ont.
Gourley, T. A.....Eganville, Ont.
Gurd, C. C.....Montreal.
Harding, E. S., B.A.....Amherst, N.S.
Harvey, T. C.....Wolfville, N.B.
Harwood, R. DeL.....Vaudreuil, Que.
Healey, D. J.....Sault Ste. Marie, Ont.
Holmes, H. S.....Rat Portage, Ont.
Hughson, R. E.....Blenheim, Ont.
Hume, W. H.....Leeds Village, Que.
Hurdman, H. H.....Ottawa, Ont.
Johnston, Wm.....Charlottetown, P.E.I.
Jost, A. C., B.A.....Guysboro, N.S.

Keenan, C. B. ..... Ottawa, Ont.
Kemp, H. G. ..... Brighton, Ont.
Kerr, A. R. ..... Montreal.
Kirby, H. S. ..... Ottawa, Ont.
Laidley, J. H. ..... Montreal.
Lennon, H., B.A. ..... Montreal.
Le Touzel, J. R. ..... Goderich, Ont.
Lloyd, C. D. ..... Lockeport, N.S.
Macauley, J. J. F. ..... River Dennis, N.S.
MacLeod, E. E. ..... Vancouver, B.C.
McAllister, D. D. ..... Belle Isle, N.B.
McCallum, E. C. D. ..... Maxville, Ont.
McDonald, H. K. ..... Pictou, N.S.
McDougall, J. G. ..... New Glasgow, N.S.
McLennan, A. A. ..... Lancaster, Ont.
McLennon, D. A. ..... Fournier, Ont.
MacPherson, D. ..... Montreal.
McRae, J. D. ..... Glennevis, Ont.
Mallock, N. ..... Moose Jaw, Ass.
Maloney, M. ..... Pembroke, Ont.
Mason, R. ..... Dalesville, Que.
Merkley, E. A. ..... Morrisburgh, Ont.
Midgley, R. J. ..... Woodstock, Ont.
Milburn, J. A. ..... Peterboro, Ont.
Morris, C. H. ..... Windsor, N.S.
Morse, L. H. ..... Bridgetown, N.S.
Patrick, D ..... Montreal.
Pennoyer, A. R. ..... Cookshire, Que.
Prescott, A. H. ..... Queensbury, N.B.
Robert, G. E ..... Holyoke, Mass.
Robertson, A. T. ..... Agassiz, B.C.
Robertson, D. M. ..... Perth, Ont.
Robertson, F. M. ..... Chatham, Ont.
Rogers, F. E. ..... Brighton, Ont.
Roy, J. J. ..... New Glasgow, N.S.
Ryan, E. J. ..... St. Kitts, W.I.
Scott, W. T. ..... Montreal.
Seaton, J. S. ..... St. John, N.B.
Skeels, A. A. ..... Montreal.
Smith, H. ..... Acadia Mines, N.S.
Smith, R. A. ..... Durham, Ont.
Stackhouse, O. C. S. ..... Lachute, Que.
Stanfield, H. M. ..... Truro, N.S.
Sutherland, G. R. ..... Hudson, N.S.
Thomas, J. E. ..... Montreal.
Thompson. J. A. ..... Kinnear's Mills, Que.
Tierney, J. A ..... Fallowfield, Ont.
Trainor, J. B. ..... Kelly's Cross, P.E.I.
Wainwright, F. R. ..... Montreal.
Wainwright, S. F. A. ..... Montreal.
Williams, E. J. ..... Montreal.

MEDALS AND PRIZES.

THE HOLMES MEDAL is awarded to WILLIAM ARNOLD FEADER, Iroquois, Ont.

THE FINAL PRIZE is awarded to WILLIAM GEORGE REILLY, Ottawa, Ont.

THE PRIMARY PRIZE is awarded to CAMPBELL BROWN KEENAN, Ottawa, Ont.

THE SUTHERLAND MEDAL is awarded to CAMPBELL BROWN KEENAN, Ottawa, Ont.

THE CLEMESHA PRIZE is awarded to WILLIAM WALTER WICKHAM, Summerside, P. E. I.

THE CLINICAL CHEMISTRY PRIZE is awarded to W. OLIVER, B. A.

THE SENIOR ANATOMY PRIZE is awarded to E. M. VON EBERTS, of Winnipeg, Man.

HONORS.

FINAL YEAR SUBJECTS.

The following gentlemen have obtained First Class Honors in the FINAL SUBJECTS:

1. Feader, W. A.
2. Rielly, W. G.
3. Anthony, X. L.
4. Wickham, W. W.
5. Bouck, C. W.
6. Wright, H. K.
7. Oliver, W., B.A.
8. Cruikshank, A.

PRIMARY SUBJECTS

The following gentlemen have obtained First Class Honors in the PRIMARY SUBJECTS:

1. Keenan, C. B.
2. McDougall, J. G.
3. Pennoyer, A. R.
4. Smith, H.
5. Stanfield, H. M.
6. McCallum, E. C. D.

Medical Items.

THE DEPARMENTTAL PRISON COMMITTEE ON INEBRIATES.—The report of the Departmental Committee on Prisons, just issued, strongly recommends therapeutic instead of penal treatment for habitually drunken criminals. The committee recognizes that habitual drunkards are not criminals in the ordinary sense, and should stand by themselves in a special category, the physical craving for drink being a disease which requires medical treatment not provided by the present prison system. The committee suggests that persons committed for drunkenness and associated offences should be collected in separate prisons or wards, dealt with as patients rather than criminals, and special medical treatment applied to them. The committee endorses the recommendation of the English committee on inebriates that magistrates be invested with full power to commit habitually drunken offenders for lengthened periods.

THE MONTREAL MEDICAL JOURNAL,

A MONTHLY JOURNAL OF MEDICINE AND SURGERY.

Communications are invited on subjects of interest to the Medical profession, whether in the form of original articles, addresses, case reports or correspondence. Those desiring reprints must state so on the manuscript.

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Subscription price, including postage, $2.00 per annum, in advance. Single copies, 25c.

The volume commences with the July number, but subscriptions may begin at any time.

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THE MONTREAL MEDICAL JOURNAL CO.,
Care of GAZETTE PRINTING CO.,
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THE

MONTREAL MEDICAL JOURNAL.

VOL. XXIII. JUNE, 1895. No. 12.

Original Communications.

CASE OF TRAUMATIC TETANUS—RECOVERY.

By J. CHALMERS CAMERON, M.D.

Until quite recently, tetanus has been regarded as practically incurable. Some years ago, a Committee of the British Medical Association, under the presidency of Mr. Callendor, investigated the subject and reported that acute tetanus is incurable, and that though anodynes and hypnotics may sometimes alleviate the symptoms, they can not be said to cure.

Though tetanus is essentially a disease of hot climates, it is by no means uncommon in Great Britain and America. In England and Wales from 1879 to 1892 inclusive, there were 2,969 deaths from traumatic tetanus ; and from 1881 to 1892, there were 568 deaths from idiopathic tetanus. Several cases of traumatic tetanus have been reported in this city, but I am not aware of any recoveries. It will, therefore, be of some interest to lay before you the notes of a successful case which I had the opportunity of observing last summer. Moreover the subject is of special interest now on account of the new antitoxin treatment advocated by the Italian school. Drs. Tizzoni and Cattani, of Bologna, claim to have worked out a method of curing tetanus by injecting the serum of horses which have been inoculated with the specific microbe under special conditions. This

method has been tried in a number of cases with a certain measure of success, but is still *sub judice*. In successful cases, improvement is generally said to begin within twenty-fours after injection, and becomes well marked and permanent in forty-eight hours. The patient feels better and is able to rest—then vomiting ceases and the tetanic spasms become less frequent and extensive—and lastly irregularity of pulse, the fever and rigidity of the abdominal muscles disappear.

E. W., æt. 13, while racing with some other boys along a new made road, about 4 p,m. on 11th June, 1894, fell and cut his left knee on a lump of hard clay. The wound was 3½ inches long, semi-circular in shape and extended transversely across the middle of the patella. The lower flap was torn away from its attachments, leaving a pouch 2 inches deep. The wound was filled with clay, bits of straw and manure. With the assistance of his companions he limped home, and his mother washed out the wound as well as she could and applied cold water compresses. About 7.30 p.m. he was brought to my office in a cab. Some fragments of mud and manure were removed from the bottom of the wound, and after thorough cleansing, the parts were brought together with eight silk sutures, gauze dressings were applied, and a long splint adjusted to fix the knee-joint. The wound was dressed on the 16th, the stitches removed on the 19th, and by the 22nd union was complete except at the outer angle, where a suture had cut through, and the edges separated slightly. This healed a few days subsequently without any trouble. The night of the 22nd was so hot that the doors and windows were left open all night ; the following morning the patient complained that his throat was a little sore, and that it was a little painful to swallow. The tonsils were found to be red and swollen. On the 25th, he complained that the back of his neck was stiff and sore to the touch. On the 26th the soreness of throat had gone, the stiffness and soreness had left the neck and gone to the back and shoulders. As he had previously suffered from muscular rheumatism and the stiffness was

slight, and the temperature and pulse were normal, the symptoms were attributed to cold, and sod. salicylat. was prescribed. On the 27th, the stiffness had extended to the chest, making the breathing somewhat difficult—the jaws were stiff, the mouth was opened with difficulty and it was hard to swallow. The temp. was 99°, pulse 80. He was lively and bright and did not feel ill, but complained of being stiff and rigid in head, neck, mouth, shoulders and chest. Diagnosis of probable tetanus was made, and chloral. hydrat. grs. x prescribed. On the 28th, the temperature and pulse rose, the stiffness was less marked in neck, shoulders and chest, but had spread to the pelvis, hips and thighs ; he was beginning to feel sick. On the 29th the temperature had risen to 103, pulse 120, respiration 40. Dr. Bell saw the case with me in consultation and confirmed the diagnosis of tetanus. The patient was then rigid over the whole body ; the arms and legs were fixed ; any attempt to move him in bed, rearrange his pillows or turn his head brought on agonizing spasms, which brought out great beads of perspiration on face and body. His mouth could, with difficulty, be forced open enough to give his medicine and a little liquid fluid. The treatment we decided upon was chloral hydrat. grs. x 4 q h. alternating with tinct. op. ♏v. x.—4 q.h. ; milk, meat-juice and stimulants freely. A trained nurse was obtained, and a careful record kept of the case. It would be tedious and unprofitable to go over the daily record with its many ups and downs ; suffice it to say that the chloral was given from day to day in sufficient dose to control spasm and secure sleep. For the first two weeks from 60 to 90 grains were required daily ; the dose was diminished as soon as possible —but it could not be discontinued altogether till August 7th. On several occasions when the dose was reduced or omitted, even after convalescence was well advanced, the spasms returned with violence and very nearly proved fatal. The opium relieved pain, but did not seem to have much effect on the spasms ; the dose was therefore regulated according to the severity of the pain. Whiskey was

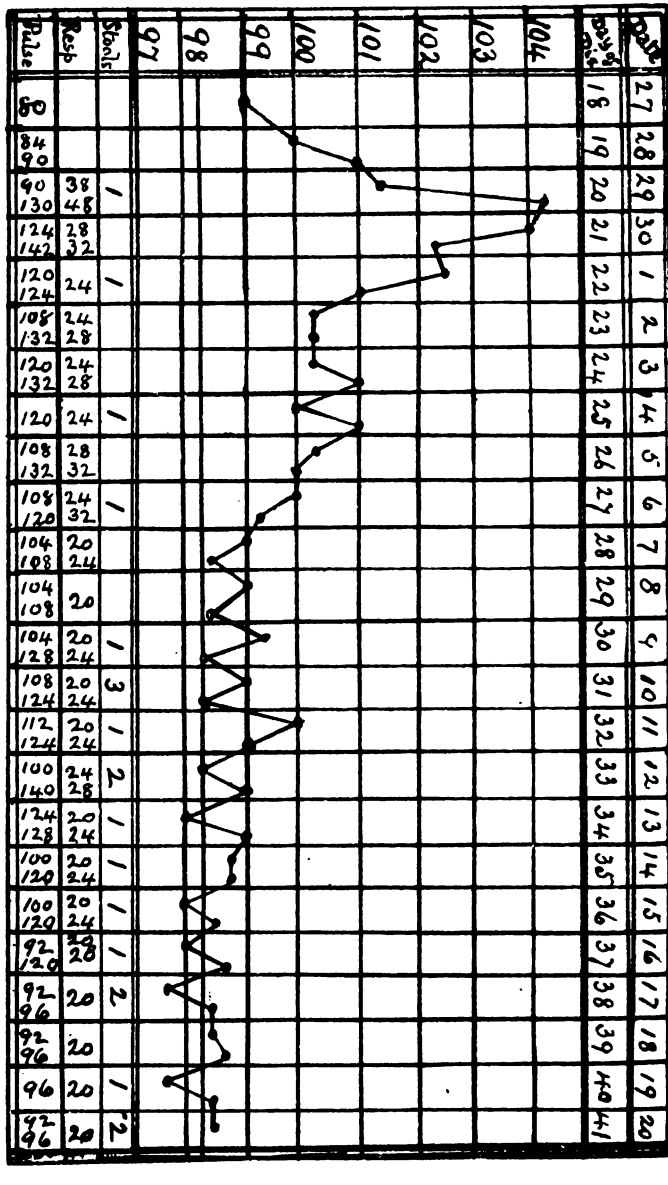

CHART OF TETANUS CASE.

The chart records the highest and lowest temperature, pulse and respiration during the twenty-four hours as shown by the two-hour and four-hour chart.

given freely, the quantity being regulated by the state of heart and pulse. The bowels were kept free with an occasional soapsuds enema.

After the tetanic spasms ceased, rigidity continued for some time and convalescence was slow. The injured leg was not stiffer than the other. Even after his general health had greatly improved and he could use his arms and body well, the legs remained more or less stiff, their movements were uncertain and unsteady, and he tired after a short walk. Even about Xmas, the stiffness had not altogether left the legs, although none was noticeable elsewhere. At the present time he seems quite well and can run and walk as well as ever.

In looking back over this case, some points seem to stand out prominently as of special interest.

1. The insidious onset of the characteristic spasms. They began on the 12th day after the injury, with a slight soreness of throat, replaced on the 14th day by slight stiffness and soreness of the back of the neck. On the 15th day stiffness and soreness had left the head, neck and throat, and settled in the back and shoulders, and on the 16th day involved the chest, causing for the first time difficulty of breathing, and attended for the first time with a slight rise of temperature (99°). On the 17th day came the first decided rise of temperature, pulse and respiration, and the patient for the first time felt ill. Then the tetanic symptoms developed with such rapidity and severity that the patient's life was soon in imminent danger.

2. The short time the infecting agent was in contact with the wound—for three and a half hours only, were the earth and manure imbedded in the wound, yet there was sufficient absorption of poisonous products to produce a slowly-developing, but severe attack of tetanus. Does the shortness of time account for the insidious nature of the onset, and the amenability to treatment? Had the manure with its putrefactive organisms and probable colon bacilli any causative influence upon the rapidity of formation and

absorption of the specific poison ? Some observers claim that pure cultures act more slowly and feebly than when colon bacilli and other organisms are present.

3. The large amount of chloral, opium and alcohol which may be administered without producing toxic effects. There could be no fixed dose ; chloral and opium were pushed till spasm and pain were relieved and at least six hours of sleep obtained out of the 24. If I had to treat such a case again, I would feel inclined to try larger doses of chloral at longer intervals, say two or three larger doses in the 24 hours, instead of six smaller ones. In this case I found that sometimes the good effect of a 20 grain or 30 grain dose would last for a day or more, while that of a 10 grain dose barely lasted four hours. In this case chloral was of far greater service than opium. The quantity of alcohol could only be determined from day to day by the condition of heart and pulse.

There can be no routine treatment of tetanus. The disease runs a definite course ; while it may destroy life in a few hours, it generally runs for a week or ten days, and if the patient can be kept alive for a fortnight there is a good chance of recovery. As there is no drug which is specific, none which can cut short the disease, the natural course seems to be to keep the patient alive till nature can eliminate the poison. To combat nerve exhaustion, control spasm, allay pain, secure sleep, maintain nutrition, keep up heart action, and prevent embarrassment of respiration—these are the chief points in treatment. The symptoms must be watched carefully and intelligently from hour to hour, and the chloral, opium and alcohol administered according to the varying conditions of the case. Much depends upon the nurse, and it is but just to say that the recovery of this case is mainly attributable to the faithfulness, intelligence and good judgment of the nurse in charge. On several occasions when the breathing was becoming shallow, a large dose of chloral promptly administered relaxed the spasm and restored the respiration

—and several times extra stimulation whipped up a faltering heart and tided over a sudden crisis.

I regret very much that cultures could not be made in this case. The University laboratory was closed owing to the extension of the buildings and Dr. Adami and others were out of town.

The new antitoxin treatment was discussed by Dr. Bell and myself, but it was impossible, as no serum was obtainable at the time on this side of the Atlantic. On the whole I am rather glad than otherwise that we could not get any serum, for the course of the case has shown that traumatic tetanus is not necessarily a fatal disease, but that there is room for reasonable hope and there is a basis for rational treatment. This, of course, must be symptomatic, rather than specific ; yet if we can relieve spasm by chloral, pain by opium, heart-failure by alcohol and exhaustion by liberal feeding, we are able to give nature valuable assistance and secure the needful time for elimination. But to be successful, we must push treatment fearlessly, limiting the dosage only by the attainment of the effects we seek.

SUPPURATIVE ARTHRITIS DUE TO THE TYPHOID BACILLUS.*

By C. F. MARTIN, B.A., M.D.,

Demonstrator of Pathology in McGill University; Assistant Physician to the Royal Victoria Hospital.

AND

A. A. ROBERTSON, B.A., M.D.,

Senior Resident Physician Royal Victoria Hospital.

Cases of typhoid fever, in which complications of a suppurative nature have been found can no longer be placed in the category of rare affections, yet so seldom are the etiological factors of these secondary conditions identical with the primary cause of the disease that any new case is perhaps properly placed on record.

The present report concerns a man, P. C., æt. 34, who entered Dr. Stewart's wards at the Royal Victoria Hospital on September 25th, 1894, complaining of headache, fever and loss of appetite, and presenting the usual distinct signs of enteric fever. He gave the ordinary history of the early stages of that disease, and on admission seemed to have reached the eighth day of the fever.

During the first ten days of his illness in the hospital, favourable progress occurred, but on the eighteenth day recrudescence supervened and the temperature continued to rise till the 29th day, by which time the highest point was attained.

Three days later (i.e., in the earliest days of defervescence) the patient complained of some pain and tenderness in right wrist joint, increased by movement. In forty-eight hours there developed other signs of acute inflammation—redness, swelling, heat and greatly impaired function—the visible signs appearing both in front and behind the joint.

* Read before the Montreal Medico-Chirurgical Society, March 22nd, 1895.

Hot fomentatious were applied, and a few days later a splint and bandage adjusted to keep the joint at rest. For the following two weeks the temperature gradually subsided to normal and then suddenly (on the forty-eighth day) again rose to 101°. The splint was forthwith removed, revealing a tender, fluctuating tumour all about the wrist joint, and manifesting no evidence of improvement in the local condition.

With a view to ascertaining the nature of the fluid within, a hydrodermic syringe was employed with the usual aseptic precautions and half a drachm of this pus removed. From this a series of cultures on broth, gelatine and agar was made, and the presence in each case of but one form of bacteria demonstrated, viz., that corresponding in size and form to the bacillus of enteric fever. Further investigations showed its extreme motility, that it produced no acid reaction on litmus agar, and that when grown in a broth medium containing calcium carbonate no gases were formed. There was further no sign of fermentation in a growth of the bacteria in 2% lactosed broth. We were thus enabled to exclude the presence of bacillus coli communis as a complicating factor.

Subsequent to this small aspiration gradual improvement ensued, though two weeks later there was still a small quantity of fluid left. Accordingly, for a second time, the hypodermic was introduced and a small amount of bloody pus withdrawn. A rabbit inoculated with this fluid manifested no ill effects. This, we believed, could be readily explained from the fact that as on a culture medium, so here the bacilli had grown old and hence innocuous to our animal.

One week later patient left the hospital, his wrist being almost completely restored to its normal condition.

We have recorded this case not only because of its interest in verifying the pyogenic properties of Eberth's bacillus, but also because in the fairly extensive literature at our command we were unable to discover any similar case in which a suppurative arthritis complicating typhoid fever was induced solely by the bacillus of that disease.

During the course of our investigations, however, Swiezynski, in the November number of *Centralblatt für Bakteriologie*, has recorded a somewhat similar instance, though merely of a periarticular inflammation, and the observer further notes the uniqueness of his case and his inability to find a parallel in the literature at his disposal. That ordinary pyogenic organisms are responsible for most of the suppurations in enteric fever has been amply demonstrated by Vincent, who further pointed out that wherever streptococci were associated with the typhoid germ the prognosis is always grave. On the other hand, the association of staphylococci could not be regarded as an unfavourable sign so far as recovery is concerned.

The correctness of these views is perhaps strengthened by the experience met with at the Royal Victoria Hospital, where a patient in whom streptococcus infection was superadded to his enteric fever succumbed to the disease. On the other hand, the numerous cases in which we have found staphylococci in various complications of typhoid fever, have all terminated in recovery.

As regards the treatment of suppurations occurring secondary to enteric fever, it has been urged by Dr. Meisenbach, of St. Louis, that in cases where Eberth's bacillus is the sole cause of the abscess formation, exactly the same surgical treatment is required as in cases where pus arises from infection with ordinary pyogenic bacteria. However, if it be true that a fresh growth of typhoid bacilli when inoculated into rabbits is fatal, and that the same growth a few hours old loses entirely this virulence, could not the same apply to the abscess formations in the human body? In other words, where Eberth's bacillus alone is the sole factor in producing suppuration, its virulence is so rapidly lost that the mere removal of the mechanical and chemical irritation, *e g.*, by ordinary aspiration, might suffice for treatment without other operative interference. In our own case, although pus was present in considerable quantity, there was never any tendency to pointing of the abscess, and its whole character after the first few days took on the appearance of a chronic affection in which all signs of active progress had disappeared.

CASE OF DEATH FROM CHLOROFORM.*

By James Bell, M.D.,

Surgeon to the Royal Victoria Hospital; Consulting Surgeon Montreal General Hospital; Professor of Clinical Surgery McGill University.

Mrs. T., æt. 30, suffering from cerebral tumour involving the lower portion of the left motor area, was prepared for operation December 6th, 1894. The administration of chloroform was begun at 2 p.m. by Dr. Davidson, with Dr. Fry watching the radial pulse. Chloroform was given on an Esmarch's wire mask, covered with thin stockinette. From first to last the amount of chloroform which escaped from the bottle was seven drams, but on two occasions the bottle was upset and some of its contents spilled. The seven drams, therefore, represent not only the chloroform which was poured upon the mask, but the quantity which was spilled on the two occasions above referred to. The whole period during which chloroform was administered was thirty-three minutes. The patient passed quietly into the anæsthetic state without any unusual or untoward symptoms. At 2.30 the pulse was 100, respiration 28, pupils contracted. At 2.35 lines were drawn on the shaven scalp with the scalpel to indicate the position of the Rolandic and Sylvian fissures. These incisions were very superficial, but the patient struggled a little, showing that she was not then fully anæsthetised. It was also remarked that there was very little bleeding from these slight incisions. (I am now inclined to attach some importance to this fact,) From this time 30 drops of chloroform were dropped upon the mask, 10 drops at a time. At 2.39 the pulse stopped suddenly and without warning, Six respiratory movements occurred after the pulse ceased to be felt, —at first full and strong —and gradually diminishing until they ceased altogether. There was then full dilatation of

* Read before the Montreal Medico-Chirurgical Society, Dec. 28th, 1894.

the pupils, and general lividity developed rapidly. The patient was inverted, hot applications were applied to the precardium, the tongue was drawn forward and artificial respiration carried on for fifteen minutes, when respiration was restored. Six natural respirations occurred in a minute, during which the lividity was decreased considerably. The pulse could not be felt, but some cardiac movement could be recognized by Dr. Stewart with the stethescope. With the return of respiration I began to feel that the danger had passed, but at the expiration of one minute respiration became slow and shallow. Artificial respiration was resumed, $\frac{1}{50}$ gr. of strychnia was given hypodermically and three capsules of amyl. nitrate, (5 minimim's each) were applied to the nostrils. At this time however, respiration had practically ceased, so that the amyl nitrate had probably no effect whatever. Respiration ceased entirely and deep lividity supervened. Restorative measures were abandoned at 2.58.

At the autopsy, seven hours after death, all the chambers of the heart were found moderately full of blood, the brain tumour was found to be an infiltrating sarcoma, diffused over a wide area of the left hemisphere with secondary nodules in the peritoneum,—(an inoperable growth).

The coroner was notified and an inquest held, the result being a verdict fully exonerating the hospital and all concerned.

In this case, which was carefully observed throughout, death very clearly began at the heart, and also very clearly was not due to over dosage, which, I believe, is a much more frequent cause of death in chloroform administration than is generally recognized. In cases of death from overdosage, moreover, the respiratory function is the first to fail, and the widespread belief that chloroform frequently, if not generally, kills through arrest of the respiratory function is, in my opinion, largely based upon the observation of such cases. This was a conspicuous fallacy in the experiments of the Hyderabad Commission. They chloro-

formed several dogs to death (overdosage). These dogs all died through arrest of respiratory function, and upon these experiments the Commission laid down the rule that deaths from chloroform *always* occurred in this way, entirely ignoring such cases as the one here reported. Throughout the whole history of chloroform as an anæsthetic, cases of sudden death have occurred from time to time in patients with sound organs, often during slight operations or before operation was begun, and at an early period of anæsthesia, in which arrest of heart's action and cessation of respiration were noted at the same moment, or in which the arrest of heart's action was first noticed. Now it must be borne in mind that in strangulation, asphyxia or paralysis of the respiratory centre, causing complete cessation of respiration, the heart's action continues and the radial pulse can be felt for an appreciable space of time—often for some minutes. On the contrary, sudden and complete arrest of the heart's action is *immediately* followed by cessation of respiration. It is, therefore, highly probable that when pulse and respiration appear to fail at the same moment, the primary failure is in the heart. The fact already noted that the slight incisions in the scalp bled only slightly, has led me to think that perhaps there was, even then, some inhibitory process at work affecting the capillary circulation, and apparently beginning at the periphery, as the pulse was still full, strong and regular. Besides, the heart failure was not complete, when the radial pulse first became so weak as to be inappreciable, as cardiac movements were recognized later and there was a return of respiration for a little more than a minute.

THREE CASES OF EXTRA-UTERINE PREGNANCY.

By Edward Evans, M.D., La Crosse, Wis.

Case I.—*Extra-uterine Pregnancy, Profuse Intra-peritoneal Hæmorrhage at third week—Operation—Subcutaneous Transfusion of Salt Solution—Recovery.*

Mrs. B., aet. 30, married, no children; splendid physique. She always enjoyed good health, except about a year ago, when she had a miscarriage, followed by some sepsis, giving chill, high fever, vomiting, abdominal pain and distension. Uterus was curetted and she made a good recovery. Menstruation has been regular since then till last period, which should have occurred three weeks ago. During past week she has had some uneasiness and pain in lower abdomen; also slight bronchitis.

While dressing on the morning of November 22nd she felt severe pain in abdomen and had desire to defæcate. Going to closet did not relieve pain, which grew worse and was accompanied by faintness and vomiting. When I saw her an hour later she was in great distress, was pale and vomiting. Pulse 80 and regular, temperature 98°.

The abdominal walls were very tense. There seemed slight dulness in right inguinal region. Examination by the vagina was unsatisfactory, so great was the pain, but there was evident fulness and great sensitiveness to right of and posterior to uterus. Bowels had been regular in all respects. The diagnosis lay between a ruptured extra-uterine fœtation and a ruptured abscess of tube, as the sudden and violent onset, the evident and great distress and the marked shock seemed to preclude everything else when taken in connection with previous history and condition. Gave hypodermic of morphia to relieve pain and shock. Two hours later she was extremely pallid. No pulse could be found at wrist, vomiting and pain continued,

abdomen was more distended and very tense and tender. I advised operation as the only hope, and that a very poor one, as there was evidently very severe hæmorrhage.

Owing to delay in procuring counsel I did not operate till 9 p.m., thirteen hours after onset. She was removed two blocks to St. Francis Hospital, and when placed on table seemed a very poor subject indeed for operation. She was pulseless and exsanguinated. The abdomen was distended and dull. There was no vaginal discharge.

Operation—Immediately before administering chloroform a hypodermic of strychnine was given and preparations made for the subcutaneous transfusion of normal salt solution, one litre of which was transfused during operation. The abdomen was found filled with clotted and fluid blood. There was a tear (.5 cm. long) in upper anterior aspect of tube about 1.5 cm. from right cornua of uterus. Here the distended tube formed a small, thin-walled sack about 2 cm. in diameter and extending to uterus.

In tying off this sack the ligature cut through the tube at cornua, which we had then to practically sew up in order to secure it. I then tied off broad ligament and removed tube and ovary, which were free from adhesions. Left tube and ovary normal. It was difficult to remove all blood from among folds of abdomen; I therefore used drainage tube and hastily closed wound. After operation I used hypodermics of strychnine, ether and brandy and a second litre of salt solution subcutaneously. She was pulseless and unconscious during the night and for twenty-four hours after operation. While removing fluid from tube next day she collapsed and appeared to be dying. Legs were bandaged tightly and elevated, hypodermics of ether and strychnine given and enemas of hot water and brandy. She slowly rallied. On third day had slight bloody discharge from vagina.

On third day she developed a severe pain in the right side and had quickened respiration, with cough and some elevation of temperature. For next two weeks she suffered

from a mild but troublesome pleuro-pneumonia of lower lobe of right side, temperature ranging from 100° to 102°, pulse 140 to 160, respiration 30 to 40. As she recovered from the lung lesion a severe cystitis developed and was troublesome for a few days, but soon yielded to local treatment. The glass drainage tube was retained for eight days and then rubber tube substituted. The discharge for first few days was nearly entirely blood, then serous and later sero-purulent, showing infection of drainage tube track. This infection occurred from the abdominal wound. About the fourth day tissue included in sutures began to look bad and later showed signs of sloughing, so that on the eighth day, in despite of severe cough, I had to remove sutures and found all the fat tissue included in sutures gangrenous and it had to be cut away, leaving a huge open wound exposing below the united deeper tissues. In a few days, in spite of packing wound with gauze and firm strapping, a large hernial protrusion was produced by severe cough. This again lessened as cough decreased. On January 2nd, 1895, I gave chloroform and curetted the sinus, removing stitches placed in cornua. I then passed nine silk-worm gut sutures in abdominal wound, taking care to bury them in hernial protrusion and approximate recti muscles. Good union resulted. Sinus closed completely about 25th February. There is no sign of hernia, though she wears a support as a matter of precaution. She has not menstruated yet

Remarks—The sac in fresh state was about 2 cm. in diameter, the rent in it about 0.5 cm. A microscopic examination of it was not made. In the ovary the recent corpus luteum was quite evident; the tube was normal.

The amount of blood in abdominal cavity was very great, distending it much and invading every part. Without the salt solution, which was injected into arms and loose tissue below and posterior to axillæ, I do not think she would have survived. An aspirating needle attached to a glass fountain douche, all sterilized, furnished the necessary apparatus.

CASE II. *Extra-uterine Pregnancy of Seven Weeks—Intra-peritoneal Hæmorrhage—Operation—Death on Third Day.*

Mrs. M., æt 33 years, third pregnancy.

On Thursday, March 21st, about noon, she was taken with severe sickening pain in right side of lower abdomen, followed by vomiting which continued for 36 hours. Pulse when seen by doctor soon after onset was 118. Temperature normal.

During the evening there was a slight discharge of blood. As she had not menstruated for seven weeks and believed herself pregnant, the doctor suspected an abortion and tamponed the vagina overnight. On removing tampon in morning found no further flow. Pain and vomiting, with obstinate constipation, continued, and she was given cathartic and enemas without effect.

23rd. Pain easier, vomiting stopped. Pulse over 100; highest temperature 101°.

24th. This morning pulse 96, temperature 98⅘°. She feels better. To-day given calomel gr. ii in repeated doses. About noon very severe pain recurred, with vomiting; she became weak and faint, with shortness of breath; had ringing in ears, and black flashes before eyes.

This was the history I obtained when called in consultation at 8.00 p.m., March 24th.

Woman was very pale and anxious looking, restless and extremely thirsty. Pulse, 130; temperature, 101°. Abdomen was distended and tender on pressure, and slightly dull on percussion in lower zone. No flatus passed since onset of attack. Per vagina, uterus was found somewhat enlarged and pushed a little to left side. The right fornix and the cul de sac were flattened and pushed downward as compared with left side. Moving uterus caused severe pain. There was a sense of indistinct fluctuation.

The abdomen was opened as soon as preparations could be completed, the kitchen being used for operating room. On incising the peritoneum the blood spurted at least six

inches high. There was a great quantity of blood, fluid and clotted, in peritoneal cavity. The right tube was found ruptured about its middle, tied off and removed.

It was difficult to completely remove all blood clots from among the folds of intestines and from pelvis. When they were removed, cavity was flushed with hot water, sponged dry and glass drain used after seeing that stump was secure. Peritoneum closed with catgut, and other tissues with silk. (Whole time on table one hour.) She was put back to bed in good condition and given 1 litre of hot salt solution by enema.

25th. Pulse, 130; temperature, 101°. Feels well, is strong, colour improved. Passes flatus freely. Tube emptied three times, first time ℥ss. of blood, afterward about ℥ii. of clear serum.

26th. Does not look so well, and has not slept much. Pulse 120 to 130; temperature, 101°. Secreting urine freely. Takes everything allowed her with relish, and has vomited only once since operation. She is passing much bad smelling liquid from the bowels, saturating the bedding under her. To-day passed a decidual cast of uterus. Distension and soreness had disappeared from abdomen and there is very little serum in tube.

27th. She had a restless night, and had only a little sleep secured by a small hypodermic of morphine. She complained a good deal. At 5 a.m. complained of being cold and faint and very weak.

When I saw her at 8 a.m. she appeared dying. Pulse 150, weak and irregular, extremities cold. I gave hypodermics of ether and strych., and brandy by the mouth. She rallied after these. I examined the abdomen and drew off about ℥i. of clear serum, and then removed glass drain, leaving a small rubber tube in its place. The abdomen was flat, soft and free from tenderness. She passed flatus and I found bedding beneath her quite saturated.

I then gave an intra-venous injection of normal salt solution, 1 litre. After this she rallied remarkably for a few hours, but again sank and died at 1.30 p.m.

Remarks.—The sac was in middle of right tube and about 3 c.m. in diameter. The rupture was transverse to tube, and included about one-half the sac, the inside of which was lined by chorion. On distal side of rent was a small adherent clot, which probably marked the seat of tear through which the first hæmorrhage occurred ; the larger tear being, in all probability, produced Sunday noon when she complained of symptoms pointing to severe and sudden hæmorrhage. Death was, in this case I think, directly due to the cathartics which had been administered and which, after the peritoneum was cleaned of effused blood, caused such a copious watery discharge from the bowels, as to drain the tissues of the fluid (already dangerously lessened by hæmorrhage) necessary to carry on the vital processes and maintain life. There certainly was no evidence of secondary hæmorrhage or of peritonitis.

Before transfusing I carefully examined for any such evidence, and found the abdomen flat, flaccid and free from tenderness, and the serum removed from tube was clear and scanty. Neither did she complain of much or any pain. There was no shock following operation. She was well and strong until about 36 hours after these evacuations began, when she began to show evidence of failing, ending in collapse early in the morning before her death. It is barely possible that had I realized sooner the danger of those discharges I might, by using opium to control peristalsis and an earlier resort to transfusion, have saved her life.

It would appear that this case (typical as it is) should have been diagnosed early and with certainty ; yet the doctor having her in charge is up to the average in ability, and that he could for three days and more ply her with enemas, cathartics and like medication would seem to justify the query, Do not many more women than we imagine die from unrecognized extra-uterine fœtation ?

CASE III. *Extra-uterine Pregnancy—Operation—Recovery.*

Mrs. R., æt 25 years. Two children æt 3 and 1 years.

Well after last confinement ; up and working in three weeks. Menstruation reappeared in seven months. Was then regular. Eleven weeks ago she skipped regular time two weeks and then began to flow. After bleeding one week she had severe cramps, which made her sick and faint, and compelled her to go to bed for a day. The bleeding continued and contained clots. In about seven days had severe cramps again. Thus she bled for five weeks, cramps recurring about every seven days, and at each recurrence compelling her to go to bed for one or two days. Was called first April 7th on account of these pains. There was no vomiting. Had difficulty in passing urine, and constipation. No bleeding for some days. Pulse, 110 ; temperature, 100⅘.

Examination.—Abdomen tense and somewhat distended. There is a large mass in pelvis reaching about 5 c.m. above pubis and occupying mostly the right side. This is tender on palpation. The cervix is pushed forward under pubis by this mass, and on careful palpation the uterus can be made out above pubis in front of and closely adherent to mass. At times a peculiar crepitation can be detected by the examining finger. The tumour is slightly movable.

Diagnosis.—Extra-uterine pregnancy or pyosalpingitis following abortion. Advised immediate operation.

Operation—April 9th. Irrigated uterus with 2% carbolic after disinfecting vagina. Found considerable free blood in the peritoneal cavity. There was a large sac lying to right of uterus. Omentum was adherent to the sack. It was freed and pushed upward. The adhesions, which were not firm, were rapidly broken up, without much hæmorrhage, and sac, including tube and ovary, delivered and removed. The stump was large, and included several remarkably large vessels.

I sewed the peritoneum of stump over raw surface in hopes of lessening adhesions. Then with fingers, sponges, and irrigation with hot salt solution, I removed great quantities of coagula from Douglas's cul de sac. The large

surface behind uterus presented a black, torn appearance, coagula had lain so long and adhesions formed. Introduced glass drain to deepest part and packed about it with iodoform gauze. She made a rapid, afebrile recovery. The gauze was removed in 48 hours, and all drainage on the eighth day.

Following is abstract of report by Dr. Adami, of McGill who kindly examined specimen for me :

It is undoubtedly a case of extra-uterine pregnancy ; but I cannot discover the faintest sign of the fœtus. The history makes it probable that fœtus escaped, and that there was a tubal miscarriage at the end of the sixth week. I find very clear evidence of the placental site and of the placental villi. The site is beyond the middle point of dilated tube (passing outward). Here I came across fairly numerous old villi, tending to become fibroid in their centres. The ovary contained a corpus luteum of fair size.

We have, therefore, to deal with an old extra-uterine pregnancy in which, after separation of the embryo, the placental site has continued to bleed.

RESUSCITATION OF A NEW BORN CHILD BY RHYTHMIC TRACTION ON THE TONGUE.*

By KENNETH CAMERON, B.A., M.D.,
Assistant Surgeon, Montreal General Hospital.

Rhythmic traction on the tongue as a means of resuscitating the asphyxiated, especially the drowned, seems to have been first suggested by Laborde, of Paris, in a paper in *Le Bulletin Médicale*, January, 1893. Since then a number of French writers have testified to the value of the method, not only in drowning but in the resuscitation of the new-born and in asphyxia or apparent death from many other causes. Hardly any communications on the subject have appeared from English sources.

I report the following case to bring the method before the notice of the members of the Society.

On Friday, February 1st, I was called to see Mrs. L., who was in labour. The membranes had ruptured and a large quantity of amniotic fluid had drained away. Both feet were presenting in the vagina, and after an unsuccessful attempt to replace them and perform cephalic version, extraction was proceeded with. No difficulty was experienced in delivering the body, but there was a good deal of delay in the birth of the head, the cord having ceased to beat some little time before the head was born. The child, after birth, was limp and cyanotic ; artificial respiration, slapping, applications of heat and cold alternately, kept up for about ten minutes failed to cause a respiratory movement, an occasional faint flutter, however, could be felt over the cardiac region.

Rhythmic traction on the tongue was then practiced. The child being placed well over on its right side, the tongue was gently seized by a pair of Pean's forceps and forcibly drawn forward, and then forcibly shoved back, as

* Read before the Montreal Medico-Chirurgical Society, March 8th, 1895.

far as possible in both directions. This was kept up at the rate of about 30 or a little more per minute. Hardly half a minute had elapsed, after beginning the traction, before the child gave an inspiration, in about another half minute a second one followed ; after that they became gradually more frequent and soon the child began to cry. The child has since been perfectly well.

This very marked effect, produced so rapidly, and by such a simple manœuvre, impressed upon me the very great value of the method, and that it is the one which should be made use of *first* in all such cases, or in any form of apparent death.

CARDIAC HYPERTROPHY—TREATMENT.

By F. W. CAMPBELL, M.A., M.D., L.R.C.P. Lon.

Professor of Medicine, Bishop's University; Assistant Physician Montreal General Hospital; Physician to Western Hospital.

I confess that when I undertook to speak on the treatment of hypertrophy without or apart from valvular disease, I thought my work would be a comparatively easy one. When, however, I began to look into the subject I found comparatively little on this special form of heart disease, and what I did meet with was so mixed with the treatment of valvular hypertrophy that it was a somewhat tedious task to separate it. When accomplished it was not satisfactory, for after all the treatment of cardiac hypertrophy is much the same, no matter what is the cause. At the outset the inquirer is met with the question, "With what hope may the treatment of an hypertrophied heart be undertaken?" Can we control the nourishment of the heart by any means possessed by our art? Some have maintained that this can be done, but the majority hold a contrary opinion. The signs which were considered as indicating the former have been proved to be misleading and fallacious. Thus the impulse may be reduced in force and extent, the first sound changed in its character and the area of cardiac dulness lessened. Notwithstanding all these signs the hypertrophy remains the same, and the apparent diminution has been brought about by disgorgement of the right cavities.

Walsh says that the theoretical indication is to tranquilize the heart by diminishing the quantity without deteriorating the quality of the blood. For this purpose he recommends an occasional venesection from the arm, taking at each time from four to eight ounces, at intervals of from two to six weeks, according to the robustness of the patient. Care, however, must be taken not to induce

an anæmic condition of the blood, which would very seriously aggravate the disease. If general bleeding is not to be thought of, then wet cupping should not be lost sight of. Personally I have met with very few cases of the disease under consideration, but in two or three I was decidedly of opinion that my patients were much benefited by wet cupping. I have also had experience of the benefit of a half dozen leeches applied over the cardiac region in calming the heart's action. We do not possess any drug capable of diminishing the bulk of the heart. Iodide of potassium has been used for this purpose and pushed to iodism without exhibiting any such power.

Walsh says quietude—physical, emotional, intellectual—is the very first of curative agents for an enlarged heart. To aid in tranquilizing it, direct cardiac sedatives—hydrocyanic acid, acetate of lead, digitalis and belladonna (the latter both internally and as a plaster over the heart, which latter I heartily endorse), must be employed during the entire treatment of the case. There must be occasional intermissions. Aconite he also strongly recommended. I have given it in the form of Fleeming's tincture, one drop every two hours till its effect was manifest. It also has very great power in removing those disagreeable sensations so common in the præcardial region. Saline and aloetic pugatives aid the good effects of rest, and diuretics are useful independent of any dropsy. Unless the patient is very plethoric, animal food in moderation may be allowed—fish under all circumstances is permissible. Alcoholic liquors must be avoided; any fluid taken must be limited. Passive open-air exercise is to be strongly recommended.

Page says digitalis is contraindicated as a rule, unless associated with a mitral lesion. Even then, if the heart's action is very forcible, it may be omitted. He considers aconite as the drug of most value and strongly deprecates the use of tobacco and alcohol. A course at the German Spa, Carlsbad, he has found often useful, not only for its immediate curative effect, but also for the knowledge one learns of how to take care of oneself.

Bartholow, whose faith in the efficacy of drugs is almost unlimited, says that he has met with good results from saline purgatives, which draw off considerable fluid from the intestinal canal. He has also used veratrium viride, which he considers more powerful but not so efficacious as aconite. He advises the potassa salts so as to act on the kidneys and thus carry off a larger amount of waste material.

Fagge has very little to say on the subject. In fact he only devotes twenty-six lines to it, in which he speaks favourably of means I have already mentioned, and adds, "Bromide of potash is mentioned favourably."

Our distinguished friend and late fellow member, Dr. Osler, in his splendid work on practice, enters fully into the treatment of hypertrophy with valvular disease, dividing his subjects under two heads, viz., (1) stage of compensation, where he says medicinal treatment is not necessary and often hurtful, but lays down a course of general treatment such as I have already mentioned; (2) stage of broken compensation—under this head he speaks strongly of the benefits to be derived from rest, and illustrates it by cases he met with during the time he was one of the physicians of the Montreal General Hospital. The embarrassed circulation, he says, must be relieved. Thi is accomplished by venesection and depletion through the bowels. Those remedies must be used which stimulate the heart's action. The best of these is digitalis. Broken compensation, no matter what the valve lesion may be, is the signal for its use. He speaks of its toxic effect due to its cumulative action and sudden outbreak. One such case I saw when the resident house apothecary during my student days at the Montreal General Hospital. Strophanthus, convallaria, citrate of caffeine and Adonis vernalis are used, and I have named them in the order of their value. But why waste time over hypertrophy with valvular disease when our time has been occupied in discussing hypertrophy *without* valvular disease? I reply because the

treatment of each is much alike. In writing of our special subject Dr. Osler says, "The treatment of hypertrophy and dilatation has already been considered under the section on valvular lesions. I would only here emphasize the fact that with signs of dilatation as indicated by gallop rhythm, urgent dyspnœa and slight lividity, venesection is in many cases the only means by which the life of the patient may be saved, and from 20 to 30 ounces of blood should be abstracted without delay. Subsequently stimulants, such as ammonia and digitalis, may be administered."

Dr. Adolf Strumpell in his latest work on medicine says: "The treatment of idiopathic cardiac hypertrophy is precisely the same as for valvular disease and myocarditis." On referring to the chapter on these subjects I find he divides them much as Osler has done, and that he practically discusses the same remedies. When compensation has been established Strumpell speaks highly of baths. He says they are not only well borne by cardiac patients. but they exercise a peculiarly beneficial and invigorating influence upon the action of the heart. Their temperature should be from 90° to 93° F.

Dyspnœa is one of the most distressing symptoms of heart disease. Our efforts should, of course, be directed to restoring compensation. If we fail, as in most cases we will, we must then treat the dyspœna, symtomatically. Morphia is most efficient in this respect. It is usually well borne, and gives great relief, especially if it be given hypodermically.

There are certain principles which apply more or less to all cases of heart disease, and these are dwelt upon at considerable length by Roberts. General management is always a matter of much usefulness. If occupation is satisfactory it may be continued, but the effect must be watched. Oertel has written favourably of the plan of treating certain forms of heart disease by "graduated exercise." In carrying out this method, the patient is made to walk up paths of gradual ascent, the amount of exercise being pro-

gressively increased as the patient is able to bear it. Special treatment in the form of certain gymnastic exercises is also advocated. Avoid all mental disturbance. Anxiety, worry, mental strain or excitement in connection with pecuniary matters, business, public life or politics is very bad. Avoid anything emotional, and get at least eight hours sleep. As regards medicinal agents, Robert's says : " As regard digitalis, it is not suitable where there is marked hypertrophy." When dilatation is also present he considers it a valuable remedy. Nitro-glycerine is recommended in cardiac dyspnœa, especially if the pulse tension is high. With regard to insomnia or disturbed sleep in cardiac cases, he finds stimulants useful—chloric ether, spiritus ether co. and spirits of camphor of service in some cases. Opiates, chloral hydrate, especially the latter, are dangerous. Paraldehyde, sulphonal, chloralamid and urethane are often good hypnotics. It is of great importance to pay attention to all the principal organs and, as far as possible, prevent them from becoming involved, especially the lungs, kidneys, liver and digestive organs generally. The article on the heart in Pepper's " System of Medicine" is by Dr. Osler. It says : " The treatment of hypertrophy consists largely of measures directed towards its maintenance to a degree proportionate to the extra work which the heart has to do. In organic disease the welfare of the patient depends on this—we cannot remove the cause, but we can, by careful hygienic and dietetic regulations, maintain the balance between the defect and the compensation. The original lesion is usually beyond control, and the special indications are to moderate certain dangers associated with hypertrophy and to promptly meet the earliest symptoms of heart failure. In the hypertrophy associated with arterial and renal disease, a special danger exists in the tendency to rupture of vessels. In these cases a vigorous heart beat, with a very high tension in the peripheral arteries, indicates mischief which may be met by taking prompt measures for the reduction of the high pressure. A brisk cathartic may avert an attack of

apoplexy, and there are cases where the old practice of bleeding—so much at one time in vogue for hypertrophy—is justifiable—might I add—*more* than justifiable. Palpitation and shortness of breath are the earliest signs of failing compensation and call for treatment, in which rest is a very important factor, in fact in many cases is all that is required. Within the past year or two I have found very excellent results in cases of weak or dilated heart by the administration of pellets of cactina—one every two hours during the day. These pellets each contain $\frac{1}{100}$ of a grain of cactina—the active proximate principle of Cactus Mexicana. My friend, Dr. Fuller, of Sweetsburg, whom I saw last summer in consultation, told me that his experience of their employment had been very satisfactory. I have also lately, to a slight extent, used as a cardiac tonic the Kola cordial made by Stearns, of Detroit, and while my experience has been limited, yet I am satisfied that it is an excellent cardiac tonic. It accelerates the pulsations of the heart, at the same time increasing its power and regulating its contractions. It also has a diuretic action. In many ways its action resembles digitalis, but it has not its cumulative action. It also has an invigorating effect on the general system. This is due to the fact that it contains more caffeine than is found in coffee, and an equivalent amount to that met with in the highest grades of tea. It also contains theobromine, an important ingredient in cocoa. It thus possesses the properties of coffee, tea and cocoa, added to a peculiar active principle of its own, called "Kolanine," which so far is said not to have been found in any other vegetable product. Strychnia, either in pill form or in the liq. strychnia of the British Pharmacopœa or hypodermically, is a capital tonic to the muscles, both voluntarily and involuntary. In cardiac dyspnœa I have had excellent and prompt results from the application of an ice bag over the præcordial regions.

Retrospect Department.

QUARTERLY RETROSPECT OF GYNÆCOLOGY.

PREPARED BY T. JOHNSON-ALLOWAY, M.D.,

Gynæcologist-in-Chief, Montreal General Hospital; Associate Professor of Gynæcology, McGill University.

Gonorrhœal Pyelitis.—Dr. HOWARD KELLY, of Baltimore, reports a very interesting case in the *Johns Hopkins Hospital Bulletin* of February, 1895. The case was one of extensive accumulation of pus in the left ureter, extending up into the pelvis of the kidney, due to stricture of ureter at the vesical end, associated with gonorrhœa. The stricture was treated by dilatation of the ureter by ureteral catheters increasing in diameter from 2 mm. up to 5 mm.

Sigmoid Proctostomy.—Dr. HOWARD KELLY reports a very interesting case of this nature in the *Johns Hopkins Hospital Bulletin* of February, 1895. The patient had been operated upon some time before by a surgeon for the relief of suffering in a young woman, due to chronic pelvic peritonitis. After removing some of the diseased structures it was found that the rectum had been mistaken for the left Fallopian tube and was divided. Both ends were brought out at the lower end of the wound and sutured there. It was to relieve this condition that Dr. Kelly performed sigmoid proctostomy. The operation consisted of separating the adhesions, tying off the open end of the rectum, and passing the sigmoid end of the bowel into a slit made in the sectum below the occluded end. The sigmoid was pulled through the slit and secured by sutures held outside the apperture by being fixed in the bite a pair of forceps. Union took place without any internal suturing and the patient recovered.

The French Method of Vaginal Hysterectomy.—Dr. EDGAR GARCEAUS, of Boston, writes a paper (*Annals of*

Gynæ. and Pædiatry., March, 1885), giving a detailed account of this operation.

This operation consists in removal of the uterus and appendages by the method known as *morcellement*, through the vagina. It was first done by Péan, of Paris, where oöphorectomy for relief of pain had been unsuccessful. It is being at present championed by Péan, Pozzi, Segond, Richelot, Jacobs and Landau. The writer has seen Champoniers and Segond do this operation several times in Paris, and it appeared to him to be an operation only suitable in certain cases. There are two dangers in connection with it which do not occur with the abdominal method. Hæmorrhage, or rather great loss of blood during the operation, and the danger of opening the lumen of the bowel in separating the adhesions, which has to be done entirely by the sense of touch. The operation undoubtedly has a future in pelvic surgery. The shock is somewhat less than after oöphorectomy, because everything in the pelvis is removed, but we think the abdominal section will still be the favourite method in the majority of cases. We think, however, with Landau, that where pus cavities have ruptured into the bladder, rectum or intestines it will be the better method. In the carrying out of this French method of removal of the uterus, tubes and ovaries there will always be one great difficulty to be overcome with English-speaking women. When you explain to a patient that her ovaries are diseased, are the cause of her suffering and must come out, it does not strike her with the same horror as when you say to her that every sexual organ she has in the pelvis must be cleanly swept, including her womb. The shock will certainly prove too much for her and she will peremptorily refuse to have anything of the sort done. If, however, she has a large fibroid tumour, causing her much suffering, or cancer of the uterus, and under these circumstances she is informed that the diseased parts must be removed, the information is received by her with a very different feeling. Mentally the womb to a

woman means her everything, the distinctive mark of her sex; the other pelvic organs are mere appendages thereunto, and she knows of them merely by hearsay, and as long as she has her womb she feels that she has not been mutilated *in extenso* and is therefore still a woman.

The importance of Menstruation in Ascertaining Mental Irresponsibility.—KRAFFT-EBING (*Jahrbuch für Psychiat*, Vol. X.): (1) Psychical integrity of women during their menses is a question most useful to consider in legal medicine.

(2.) It appears expedient to find out if the crime commited by the prisoner coincided with her menstrual period. Under the term "period" the author includes not only the days during which blood comes away, but those which precede and follow it.

(3.) An examination of the mental condition should be advised when the criminal act coincides with this period. This examination is indispensable when the history of the patient reveals a neuropathic taint or the existence of mental trouble during former menstrual periods, or when the act itself discloses peculiar changes.

(4.) When it is evident that the menstrual process exercised a powerful influence on the mental life of the subject, she should have the benefit of this fact, even if no menstrual insanity can be made out in what concerns the application of the law in the given case.

(5.) When the crime coincides with the epoch of menstruation in a feeble-minded person she should be declared irresponsible, for there is reason to believe that the act was one of passionate impulse.

(6.) But the subjects who obtain a verdict of "not guilty" on mental menstrual trouble should be considered as extremely dangerous, and are to be put under a severe watch at the epoch of their menses. The best thing is to put them into an asylum, where they will have good care and often a cure is brought about. The author gives twelve cases.

In such cases it might, however, be well to consider whether it would not be more humane to give these patients a chance of freedom by bringing about a premature menapause. Menstrual epilepsy has been cured in several cases and why not menstrual insanity.

The Nerve Theory of Menstruation.—CHRISTOPHER MARTIN *(The British Gynæcological Journal,* November, 1893.) The conclusions of this well-studied paper are as follows:

(1.) Menstruation is a process directly controlled by a special nerve-centre.

(2.) That this centre is situated in the lumbar part of the spinal cord.

(3.) That the changes in the uterine mucosa during the period are brought about by catabolic nerves, and during the interval by anabolic nerves.

(4.) That the menstrual impulses reach the uterus either through the pelvic splanchnics or the ovarian plexus—possibly both.

(5.) That removal of the uterine appendages arrests menstruation by severing the menstrual nerves.

Affections of the Eyes due to Dysmenorrhœa—Dr. GALLEMAERTO (*Archives de Tocologie et de Gynecologie,* January, 1895) reports two cases with functional affection of the eyes due to dysmenorrhœa. The author gives a brief review of the work in this direction. The acuteness of vision and the field of vision during menstruation has been studied by Finkelstein. The author found that there was no change in central vision, but that there was a contraction of the field of vision, which commenced two or three days before the period, attained its maximum on the third or fourth day of menstruation, and ceased about the eighth or ninth day. This change of the field of vision was attended with other nervous phenomena, such as headache, palpitation, etc. The contraction was not alone for white, but also for red, yellow and blue.

Results of Total Castration by way of the Vagina in

Affections of the Appendages as Compared with those of Abdominal Bilateral Ovario-Salpingectomy.—Dr. JACOBS, Brussels : Since the First International Congress of Gynecology and Obstetrics, held at Brussels in 1892, the question of total castration by the vagina has made great progress, and I believe that we are able to present strong arguments in opposition to the partisans of the abdominal method of operation.

For my part, I have been able to keep under observation for a long time patients on whom I had operated both by way of the vagina and the abdomen, so as to estimate the comparative value of the two methods by the remote results of each.

I performed total vaginal castration in 184 cases of purulent or chronic bilateral " annexitis," with or without complications in neighboring organs. The results in these 184 cases were 179 recoveries and 5 deaths, that is, a mortality of 2.71 per cent.

This death rate proves that the danger attending operation, far from being greater, is even less in vaginal castration than intervention by way of the abdomen.

Adding together the statistics of Terrier, Terrillon, Doyen, Schauta, Chrobak, Zweifel, Martin, Jacobs, Lawson Tait, Dubois, and Gallet, we get 1540 cases of operations by way of the abdomen, with a mortality of 5.7 per cent., whereas the statistics of interventions by way of the vagina, furnished by Richelot, Doyen, Péan, Segond, Rouffart, and Jacobs, give us a mortality of 4.49 per cent. in 690 cases.

Moreover, it is to be noticed that at first vaginal castration was reserved for cases in which it was impracticable to operate by way of the abdomen. Considering the success obtained under these circumstances and the invariably favourable issue in cases where the conditions were less grave, we are convinced that there is every advantage in practising internal castration and excision of the appendages *in all cases where the surgeon is led to resort to bilateral ovario-salpingectomy.*

During about four years I have kept in view 98 of the patients on whom I operated by way of the vagina. Out of this number 6 complained of painful adhesions contracted with the bladder, 1 lost her reason eight months after the operation, 1 was affected with an intestino-vaginal fistula, 2 are troubled with very severe intermittent attacks of pain in the pelvic region; the remaining 88 regained their previous state of health, after experiencing for a short time only abundant perspiration and paroxysms of heat, which rapidly gave way to treatment by hydrotherapy.

A series of patients, for whom I operated for chronic interal affections, both hæmatosalpinx and uterine tumours, associated with bilateral annexitis, were kept under observation for more than a year, no complications of any kind coming to light during that time, as a rule.

On the other hand, I practised 189 operations by the abdominal way for 120 cases of bilateral and 69 of unilateral annexitis (pyosalpinx, hæmatosalpinx, bilateral ovarian affections, etc.)

Out of these 189 operations, 6 resulted in death, 5 of which were cases of bilateral and 1 of unilateral annexitis; the death rate, 3.17 per cent., was consequently higher than in operations through the vagina.

In addition, remote complications, such as uterine or peri-uterine affections, painful and obstinate metritis, were of frequent occurrence.

In 21 cases of operation for bilateral annexitis, the leucorrhœa was very abundant, the menstruation persisted and was accompanied with severe pain. Unilateral ovarian affections, it is true, showed better results; but the microcystic degeneration was frequently reproduced on the previously healthy side.

The operations practised by way of the abdomen consequently furnished results nearly as successful as those obtained by total castration, so that it was only by watching the effects at a more remote period that I was convinced

of the excellent results attending the latter operation in cases where it is necessary to remove the appendages. As a matter of fact, if the uterus is preserved under these conditions, it very frequently gives rise to severe complications, for the treatment of which palliative measures are generally inefficient. It must also be noted that, in operating in this manner, diseased portions of the oviducts are left in place, which also may cause relapse.

Castration has been reproached with giving no opportunity for variation according to existing conditions, and it has been said that, once commenced, this operation must necessarily be continued to the end. Judging from my experience, this statement is not correct. If the precaution is taken to begin the operation by opening Douglas' pouch, immediately exploring the appendages with the finger, *it is always possible to ascertain their condition.*

When the alteration is found to be bilateral the castration should be complete, but if only the appendage on one side is affected there is no difficulty in practising unilateral ovario-salpingectomy by way of the vagina. I have been able to adopt this procedure in thirteen cases, all of which proved successful.

I believe, therefore, that I am justified in asserting that, in unilateral affections of the appendages, operation by way of the vagina is the method of selection, and that, when the diseased condition is bilateral, total castration by way of the vagina is preferable to bilateral salpingectomy through the abdomen.—*Read at the International Medical Congress, Rome.*

Cancer of the Female Genital Tract.—Dr. H. J. BOLDT: Primary cancer of the vulva is extremely rare, dermoid or epithelial cancer being the most prevalent form, and the inner and lower part of the labium majus the usual site. It is most frequently found between the ages of forty and sixty years, but may occur during childhood or old age. Traumatism, frequently recurring attacks of vulvitis, and chronic eczema may cause it. It rarely extends to the

other labium, but it may involve the perineum, thighs, vagina, bladder, or rectum ; and it usually causes death in from two to five years after the initial nodules are noticed. Medullary and scirrhous cancers and sarcoma rarely affect the vulva.

Primary cancer of the vagina is even rarer than of the vulva ; it may occur at any period of life, but usually between the twentieth and fortieth year. There may be a broad-based epithelioma blocking the vagina, or small isolated nodules, or small indurated ulcers, that become confluent and involve the entire vaginal circumference. Neoplasms in the vagina rarely attract the patient's attention in their early stages ; when discovered disintegration has usually commenced, with hæmorrhage, discharge, etc. In both the vulva and the vagina extirpation of the part involved is but a palliative measure, recurrence being the almost invariable rule. Cancerous infiltration of the vagina from carcinoma of the cervix gives a better prognosis, recurrence being slow.

Cancer of the uterus, while usually occurring between the ages of forty-five and fifty years, may occur at early periods of life. Since the introduction of vaginal hysterectomy it has been found that corporal, though not nearly as frequent as cervical, carcinoma is not at all rare. Cancer of the cervix is generally divided into cancer of the portio vaginalis, of the supra-vaginal portion of the cervix, and of the cervical mucosa. There may be dermoid, scirrhous, adenoid, or medullary cancer of the cervix ; the first two forms are comparatively rare ; adenoid cancer is the most common form and it sooner or later changes into the medullary type. The early stages of cervical cancer cause no symptoms, and its existence is rarely suspected until ulceration, bleeding, and discharge occur ; pain is not a characteristic symptom until extra-uterine tissue is involved. Diagnosis is impossible without a microscopical examination, though the latter may be indefinite in the early stages of the disease. It may resemble follicular

erosion with elevated and indurated edges, though the papillary projections break down with greater readiness in cancer.

The treatment is palliative or radical ; the former is employed when the malignant structure cannot be removed *in toto*. Curetting and subsequent cauterization are one of the best forms of treatment, or else curetting and packing with pledgets saturated with chloride of zinc. If rigid antisepsis is adhered to, piercing of the uterus by the curette may do no harm. I have found Dr. Byrne's method very useful ; the uterus is curetted, the cavity repeatedly sponged with a mixture of commercial acetic acid (3 j), glycerine (3 iij), and carbolic acid (grain xx) ; then the cavity is packed with absorbent cotton. For radical treatment vaginal hysterectomy is the best operation.

Menstruation and Ovulation.—LEOPOLD (Dresden) and MIRONOFF (Charkow), after an interesting study of the relations of menstruation and ovulation, come to the following conclusions :

1. Menstruation, *i. e.* the periodic escape of blood from the mucous membrane of the uterus, is generally accompanied by ovulation, but frequently takes place without it.

2. This periodic escape of blood is dependent upon the presence of the ovaries and upon a sufficient development of the uterine mucosa, two factors without whose activity at the same time the typical escape of blood cannot be conceived of ; accordingly it does not depend upon the maturing and bursting of a Graafian follicle. In accordance with this law menstruation occurs neither when the ovaries are wanting nor when the mucosa is atrophied, even though in the first case the mucosa may be perfectly developed and in the second the processes in the Graafian follicle normal.

3. Should ovulation occur, it is as a general thing to be referred to the time of the escape of blood. It demands for its realization a powerful congestion of the genital organs, lasting several days, and in that case forms a typical corpus luteum.

4. Ovulation also occurs at other times than the monthly escape of blood, but this seems to be rare under physiological conditions.

5. Sometimes the ovulation and the development of a typical corpus luteum are replaced by the congestion of a follicle that is not ripe or ready to burst (atypical corpus luteum).

6. Normal follicles also occur in senile atrophy of the ovaries, in which physiological bursting occurs and which form normal corpora lutea.

In general terms, menstruation with ovulation is more common than menstruation without ovulation.

It is certain that ovulation can take place at the time of the periodic escape of blood without there being any external bleeding (ovulation without menstruation).—*Archiv f. Gyn.*, 1894, Band xlv. Heft 3.

Ligation of both Internal Iliac Arteries for Hæmorrhage in Hysterectomy for Carcinoma Uteri.—KELLY, in a recent case, after ligating the ovarian arteries at the brim of the pelvis, upon attempting to tie off the broad ligaments the tissues were found to be so friable and infiltrated that the ligatures cut the "moment traction was put upon them." Attempts to check the profuse hæmorrhage were futile and the author at once determined to cut off the blood supply of the pelvis by tying the internal iliac arteries. The peritoneum over the arteries was incised, first on the right and then on the left side, and the arteries were ligated by passing stout ligatures by means of the curved aneurism needle. This checked all hæmorrhage. The left ureter had to be dissected out from the mass, which even then could not be completely removed, owing to extensive infiltration of the broad ligaments. In the latter stages of the operation the patient collapsed, but was revived by the transfusion into the radial artery of a half liter of salt solution.

The patient was seen four months later and careful ex-

amination failed to disclose any trace of the carcinomatous process.

The apparent cure of the disease by the cutting off of its main blood supply was an interesting feature of the case.—*Johns Hopkins Hosp, Bull.*

Hysterectomy for Prolapsus.—The conclusions drawn by POZZI in a recent article are:

1. Vaginal hysterectomy may be necessary to permit the reconstruction of the perineum in cases of complete prolapsus. To be efficacious it must be accompanied by the resection of a large portion of the vagina and followed by a restoration of the perineum.

2. The results already published justify the claim that good results are obtained when no one of these three elements of the operation is omitted; but hysterectomy is valueless if done alone.

3. The hysterectomy, colpectomy followed by colporrhaphy, and the perineorrhaphy may all be done at one sitting. If so done ligatures must be used instead of forceps. Operation at a single sitting is preferred unless etherization of an hour's duration is contra-indicated.

The "colpoplexy" of Martin, Fritsch and others is unnecessary, as the normal processes of cicatrization after a hysterectomy are sufficient to obtain the desired result.

5. The most satisfactory method to remove at the same time the uterus and a large piece of the vagina is to mark out a large triangular flap anterior to the cervix, and a smaller one of the same form posterior, and dissect these entirely free before proceeding to the extirpation of the uterus in the customary manner, if present. Medicated tampons might be useful, also astringent and alterative applications, but caustics would do harm. Iodoform was most efficient when it could be freely applied to the interior surface of the uterus; he had only used the other agents because iodoform was more difficult to apply and because of its odour. Complete closure, if it existed, must be overcome; gradual dilatation was best, with subsequent drain-

age. The atrophied condition of the muscular structure would lead to tearing if rapid dilatation were attempted. Peroxide of hydrogen would be useful. The question had arisen in his mind whether total removal of the uterus would not sometimes be justified, but one should at least try the treatment already referred to. When there was complete prolapsus vaginal hysterectomy was the proper treatment.—*Ann. de Gyn. et Obst.*, **March**, 1894.

Reviews and Notices of Books.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Volume II., Nutritive Disorders. New York: William Wood & Company. 1895.

The first article in this volume is on Diseases of the Adrenal Bodies, by Sir Dyce Duckworth. It is scarcely necessary to add that the subject is treated in a very able manner by the distinguished author. The article is chiefly devoted to a description of Addison's disease. A short account is given of certain experiments on the pharmacology of adrenal tissue, but the few cases in which this substance has been employed does not hold out any hopes that it is likely to prove of any value.

Diabetes Mellitus is dealt with in a very elaborate article by Carl Von Noorden, of Frankfort. It extends to about 150 pages. The treatment of the disease receives very special attention.

The article on Acute, Subacute and Chronic Rheumatism is contributed by F. S. MacLagan, of London, the introducer of salicine as an anti-rheumatic agent. The subject is dealt with in all its phases, the unusual manifestations and complications receiving more attention than in any other work we know of.

H. M. Lyman, of Chicago, is the author of the article on Gout. This obscure and difficult subject is considered in all its numerous phases in a very able and practical manner.

A. E. Garrard, of London, writes on Arthritis Deformans. Stress is laid on the importance of the early recognition and appropriate treatment of this disease. How frequently it is found that injudicious treatment on the part of the physician in the early stages (founded on a wrong diagnosis) acts as an exciting cause to the natural degenerate tendency.

The late Dujardin-Beaumetz, of Paris, was the writer of the section devoted to diseases of the muscles. It is unfortunately the last article written by the gifted Parisian physician.

The final article in this volume is on Obesity by Oertel, of Munich. It is of more than ordinary scientific interest.

It will be seen that the various contributors are men of great experience in the various diseases dealt with by them.

The second volume more than sustains the promises of the publishers.

System of Surgery. Edited by FREDERIC S. DENNIS, M.D., assisted by John S. Billings, M.D., LL.D., D.C.L. Vol. I. —History of Surgery—Pathology—Bacteriology—Infections—Anæsthesia—Fractures and Dislocations—Operative Surgery. Pp. 880. Lea Brothers & Co., Philadelphia. 1895.

The volume opens with a masterly article by Dr. John S. Billings on "The History and Literature of Surgery," tracing, as fully as the limits of the space will allow, the growth of the science and art of surgery from the earliest mention up to the present time. Surgical Pathology is from the pen of Wm. T. Councilman, and Surgical Bacteriology from that of Wm. H. Welch, two articles which set forth in a most readable manner what the surgeon wants to know about these subjects. Charles B. Nancrede writes on the Symptoms, Diagnosis and Treatment of Inflammation and its Results, Wm. H. Carnott on Septicæmia, Pyæmia and Poisoned Wounds, J. Collins Warren on Traumatic Fever, Erysipelas, and Tetanus, and Hermann M. Briggs on Rabies. Under the heading of Gunshot Wounds, Dr. P. S. Connor gives a most complete article which, while of more interest to military surgeons, will be read with much pleasure by all, for such cases are only too common in a country were firearms are so plentiful, and the writer illustrates most graphically the lesions which may be produced by various missiles. The monograph on anæsthesia is by Horatio C. Wood, whose experiments and observations on this subject are too well known to need any comment. The editor himself writes an able article on Fractures and Dislocations, which is most fully illustrated by means of carefully selected engravings, the majority of them being from photographs of actual cases, which, while obtaining the desired result, are more valuable on account of their truthfulness of detail. Arpad E. Gerster has given a careful account of the methods pursued in preparing for an operation and the principles underlying the

various details, while the volume is brought to an end by Stephen Smith, who writes on Operative Surgery, and as far as space will allow him does it most thoroughly, but it is difficult to compress a whole volume within the limits of a single article.

The whole volume is much to be praised and has been most carefully edited, so that the articles do not overlap. The print is clear and the paper good, so that it makes a very handsome book. The illustrations deserve particular mention, the details being well worked out and the lines being exceedingly clean cut and definite.

With the three volumes which are to follow, the book will form a most welcome addition to the library.

The International Medical Annual and Practitioner's Index. A Work of Reference for Medical Practitioners. Thirteenth year. 1895. New York: E. B. Treat, 5 Cooper Union. Chicago: 199 Clark Street. Price, $2.75.

This very useful work contains a summary of the chief contributions to practical medicine during the past year. In addition some special original articles are contributed, some of which are of more than ordinary interest, such as the article by Hector McKenzie on Friedreich's Disease; Ridlon on the Surgery of Infantile Paralysis; Dundas Grant on the Diagnosis of Diseases of the Organs of Hearing; Snyley on the Prevention of Puerperal Fever; Simeon Snell on Eye Sight and School Life; Rutter on the Treatment of Diphtheria by Antitoxic Serum, &c., &c.

Clinical Diagnosis. By ALBERT ABRAMS, M.D., (Heidelberg) Professor of Pathology Cooper Medical College, San Francisco, Third Edition. Illustrated. New York: E. B. Treat, 5 Cooper Union. 1894. Price, $2.75.

This is a very complete manual on clinical diagnosis. The present being the third edition, it has been considerably enlarged and carefully revised.

A short but accurate account is given of the more important results obtained by the improved methods of blood examination. The chapter on the urine is very complete.

We recommend the volume on being of value to both practitioners.

Sexual Neurasthenia (Nervous Exhaustion). Its Hygiene, Causes, Symptons and Treatment. With a chapter on Diet for the Nervous, by G. M Beard, A.M., M.D. Edited, with Notes and Additions by A. D. Rockwell, A.M., M.D. Fourth edition. New York: E B. Treat. 5 Cooper Union. Price, $2.75. 1895.

This now classical work needs no special reference. In its fourth edition the knowledge on the subject of which it treats is brought up to that of the present.

The Extra Pharmacopœia. By William Martindale. F.C.S., Medical References and a Therapeutic Index of Diseases and Symptoms, by W. Wynn Westcott, M.B. Eighth edition. London: H. K. Lewis, 136 Gower street, 1895.

The eighth edition of the Extra Pharmacopœia contains a special chapter on antitoxins, serums and lymphs, and on animal glands and tissues and their preparation. The new compound antipyretis, antiseptics and hypnotics are also fully dealt with.

In every direction additions have been made. We consider this little work almost indispensable for the modern practitioner.

Teratologia. 1895.

This journal, now in its second year, has fully sustained the promise of its early numbers.

The January number contains articles on Congenital Thoracic Deformity, by John Thompson, L.R.C.P.E.; Cerebral Hæmorrhage in a Fœtus. Wm. Osler, M.D.; Pre-auricular Appendages, by J. W. Ballantyne.

In addition to the abstracts of current literature a complete bibliography of the subject is commenced.

In the April number are articles on Teratological Types, by J. W. Ballantyne; Double Penis, by A. A. S. Skirving; Trois cas d'éliphantiacis congeniales, by D. Moncoro; Rigor Mortis in the Fœtus, by J. W. Ballantyne, an interesting short monograph of 20 pages, giving a personal case and 29 references to published cases. The writer holds that fœtal rigor mortis occurs in utero more rapidly than after expulsion, and that its occurrence is not therefore any proof of live birth or independent existence.

Canadian Medical Literature.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL.]

PERIODICALS.

MARCH, 1895.

THE CANADIAN PRACTITIONER.

(1.) A case of puerperal fever, with remarks—T. McKeough, Chatham, Ont., p. 161.

(2.) Appendix vermiformis—J. Caven and D. Barnhart, Toronto, p. 168.

Diseases of the oral mucous membrane—E. Herbert Adams, Toronto, p. 174.

(3.) Lodgement of a foreign body in the appendix vermiformis—A. McPhedran and J. Caven, Toronto, p. 180.

ONTARIO MEDICAL JOURNAL.

Prostitution in the profession—James Sampson, p. 256.

Axile adjustment; a new and rational method of delivering the placenta—Wm. R. Nichols, Baden, Ont., p. 258.

THE CANADIAN MEDICAL REVIEW.

Report on Coroners' inquests.

MARITIME MEDICAL NEWS.

(4.) Melæna Neonatorum—F. H. Wetmore, Hampton, N.B., p. 49.

(5.) Symphysiotomy—G. A. B. Addy, St. John, N.B., p. 50.

Diuretics—A. Halliday, Stewiacke, N.S., p. 52.

MEDICAL NEWS (Philadelphia, March 31st).

(6.) The treatment of epilepsy—W. H. Hattie, Halifax, N.S.. p. 340.

APRIL, 1895

THE CANADA LANCET.

Artificial feeding and care of infants—John W. S. McCullough, Alliston, Ont., p. 229.

Empyæma of the maxillary sinus or antrum; a case—G. R. McDonagh, Toronto, p. 231.

Cauterization of the Nares, and accidents that may follow—E. Fletcher Ingals, Chicago. p. 232.

ONTARIO MEDICAL JOURNAL.

Hysterical neuroses, p. 294.

Wrist-drop following gun-shot fracture of middle third of Humerus, p. 294.

Fracture of the ulna with dislocation of the head of the radius, p. 295.

THE CANADIAN MEDICAL REVIEW.

The treatment of dysmenorrhœa—Albert A. Macdonald, Toronto, p. 119.

Foreign body in œsophagus—C. Trow, Toronto, p. 124.

THE MARITIME MEDICAL NEWS.

Anorexia nervosa—P. R. Inches, St. John, N.B., p. 73.

Effect of certain drugs on excretion of urea, etc. · A. Halliday, Lower Stewiacke, N. S., p. 75.

The therapeutics of typhoid fever—M. Chisholm, Halifax, p. 80.

THE CANADIAN PRACTITIONER.

Operations for the removal of ovarian tumours—A. Van der Veer, Albany, N. Y., p. 239.

Obstetric forceps—K. N. Fenwick, Kingston, p. 255.

DOMINION MEDICAL MONTHLY.

Report of the Provincial Board of Health.

(1.) The author reports a case of puerperal fever where, notwithstanding the curetting, the careful and assiduous use of the uterine douche and the use of the ordinary means to conserve the energy of the vital processes and assist in getting rid of the absorbed poison, the patient became worse, when on the seventh day treatment by cold baths was commenced and was kept up as long as there was elevation of temperature. The intra-uterine douche was persisted in, being administered every four or six hours. The recovery was rapid and satisfactory.

(2.) In this paper the anatomy and pathology of the vermiform appendix is discussed, the authors basing their notes on personal observations of a considerable number of cases. There is no structure in the body that one can be less certain of finding "at home." They agree in a general way with Clado, who states that the appendix is kept in place by two folds of peritoneum, (*a*) a meso-appendix attached to the iliac fossa, and (*b*) a fold perpendicular to the first and attached to the posterior part of the ileum, but they find there is a considerable variation with regard to length, position and attachment of these folds. The mesentery of the appendix was *always* present and ran nearly or quite to the tip in other cases ; its shape is commonly trianglar, but occasionally it forms a narrow band of even width from end to end. In females a double fold of peritoneum runs from the root of the appendix to the ovarian ligament. They also found a corresponding fold from the colon on the left side. The position of the appendix varies so greatly that one hesitates to pronounce which is normal. There may be normal variations or

variations due to ante-natal or post-natal peritonitis. They have not yet found an appendix which could be justly termed extra-peritoneal; it has always been distinctly inside the cavity. The length varies considerably from one-half inch to nine inches, the average being 3.835 inches. A perfect lumen is generally seen varying considerably in diameter in different cases, but complete obliteration is not common. The authors do not think that a contracted outlet is the most dangerous change of calibre that can occur, since intra appendical accumulations may happen, no matter where contraction may be found. They contradict the statement of Treves that the appendix is frequently absent but state that in many cases careful examination is necessary to find the organ, but that they have never come across one of complete absence. The appendix contains normally more or less mucous, semi-fluid fæcal matter is not infrequently seen, with no visible changes. In forty cases six fæcal concretions were found, with no signs of damage. Only one true foreign body, viz, a pin, was detected (3). The bacillus coli communis is regarded as a normal inhabitant. The causes, both predisposing and exacting, of appendicitis are multiple; germ invasion is an essential part of the process. It is doubtful whether the pressure of foreign bodies and concretions cause necrosis, and so excite inflammation with perforation, though they may modify the tissue to such an extent as to permit of the lodgement of organisms.

(4.) A case of this rare condition is reported. On the second day after birth, a few hours after a dose of castor oil, a small, dark, tarry stool was passed, followed in half an hour by a profuse flow of blood from the bowel. In the next twenty-four hours there were twelve motions, at first each contained two to four ounces, but they gradually became less in amount and less frequent. The child was blanched, pulseless and apparently dying. Absolute rest was ordered and paregoric, tincture of perchloride of iron and spirits of turpentine were used In twenty-four hours

there were signs of reaction and in a couple of days the child could nurse again and soon regained its strength.

(5.) This case, which was the first performed in the Province of New Brunswick, was Mrs. G., aged 25, weight 110 pounds, height 4 feet 1 inch, a hunchback and lame in the right leg; had a child two years before which was removed by embryotomy followed by septicæmia and peritonitis. On April 17th, 1894, labour commenced, and on the 20th it was found necessary to perform symphysiotomy, as the head, which was unusually large, had not engaged in the passage, which was unusually narrow. The operation and delivery were performed in the usual way and the patient did well until the third day, when symptoms of intestinal obstruction appeared and she died on the following evening. An autopsy showed that the death was due to constriction of the bowels by a firm fibrous band at the junction of the cæcum and colon. The child lived and was doing well. No measurements of the child's head or of the pelvic diameters are given.

(6.) The term "auto-intoxication" has become very familiar to physicians within recent years, and probably no disease indicates more strongly the likelihood of a species of self-poisoning than that peculiar manifestation of disordered nervous action known as epilepsy. If such convulsive seizures were due to morbid anatomical conditions, the very perfect apparatus which we possess would have conclusively demonstrated such a condition, so we are driven to look in some other direction for the discovery of these "nerve storms," and the author believes that it is towards some toxic material we must direct our attention if we are to find the cause of the trouble. Acting on this theory he has treated a number of cases of epilepsy in the Nova Scotia Hospital for the Insane, and sums up his results that an average of 12.3 fits per patient per month under bromide potassium alone, or in ordinary mixture, has been reduced to just about half that number during eighteen months that he had combined intestinal antiseptics with the ordinary drugs, which result seems to be a strong argument in favour of the theory of auto-intoxication in this disease.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Discussion on Cardiac Hypertrophy apart from Valvular Disease.
Experimental achexia Strumipriva—Dr. Wesley Mills.
Gastro-jejunostomy—Dr. Shepherd.
Pulmonary Embolism—Dr. Wyatt Johnston.
Aneurism of the Thoracic Aorta—Dr. J. G. Adami.
Pernicious Anæmia—Dr. F. G. Finley.
Resuscitation by Rhythmic Traction—Dr. Kenneth Cameron.
Aneurism of the Femoral Artery treated by Ligature of the External Iliac—Dr. Jas. Bell.
Experimental Cachexia Strumipriva—Dr. Wesley Mills.
Experimental Cerebral Localization—Dr. Wesley Mills.
Sarcoma of the Ileum; Resection with the Murphy Button; Death—Dr. Jas. Bell and Dr. Adami.
Suppurative Arthritis due to Typhoid Bacillus—Dr. C. F. Martin.
Rhythmic Traction on the Tongue—Dr. Wesley Mills.
Some Interesting Conditions Attending Post-Nasal Growths—Dr. H. D. Hamilton.
Multiple Osteo-Myelitis—Dr. Armstrong.
Depressed Fracture of Skull—Dr. Armstrong.
Seborrhœa—Dr. J. M. Jack.
A New Form of Ether Inhaler—Dr. Jas. Bell.

Stated Meeting, March 8th, 1895.

DR. G. P. GIRDWOOD, PRESIDENT, IN THE CHAIR.

Dr. R. A. Westley, of Alexandria, was elected an ordinary member.

Experimental Cachexia Strumipriva.

Dr. WESLEY MILLS exhibited a dog from which he had removed the thyroid gland. The animal was in good condition at the time and bore the operation so well that he feared the usual symptoms were not going to develope. The operation was performed on Monday evening, and on Friday most pronounced symptom of dyspnœa and fibrillary twitchings appeared, which, however, lasted but a short time and had almost disappeared when the animal was shown. The only symptoms then present was the dog's extreme dulness. The temperature was about 98°, which was

for the dog slightly subnormal. The subject had been thoroughly investigated by Continental and English scientists, notably Horsley. The symptoms differed in different animals ; but were most pronounced in the carnivora. Those referable to the nervous system were increased and then diminished function such as spasms, and later cretinism and myxœdema. The dullness (cretinism) was manifest in this dog; although the contrast between his present and his usual behaviour was not marked. Myxœdema in some cases, needed careful investigation to find ; it was certainly not pronounced in either of these cases. In another dog operated upon, dulness, emaciation, and dyspnœa were the prominent symptoms. The explanation was, that by excision of the thyroid a controlling influence over metabolism was removed. The dyspnœa was caused by the venous condition of the blood, and by the influence of toxines on the respiratory centre. The œdema, dulness, etc., were explained by alterations in nutrition and in the nervous system.

Dr. F. J. SHEPHERD suggested that some of the symptoms might have been due to the effects of the operation.

Dr. JAMES BELL was surprised that Dr. Mills should consider that the changes described could have taken place in so short a time.

Dr. W. S. MORROW corroborated what Dr. Mills had said of the animal's condition.

Gastro-jejunostomy.

Dr. F. J. SHEPHERD exhibited a woman, æt. 68, upon whom he had performed this operation, and who had been sent to his wards by Dr. G. Gordon Campbell as a suitable case for pylorectomy. The tumour about the pylorus seemed small, well defined and unattached. The patient readily consented to operation, and on August 11th, 1894, an incision was made in the median line and the tumour examined. The case seemed favorable for pylorectomy, so the omentum was tied off, and on lifting up the stomach a large mass of infiltrated glands was seen on the posterior

wall of the abdomen. All idea of continuing the operation of excision was abandoned and gastro-enterostomy performed. A piece of jejunum was brought up to the anterior wall of the stomach and fixed there by a double row of sutures, the outer row of Lembert sutures was continuous. No plate, button or other mechanical device was used. The patient did perfectly well and went out of hospital during the first week of September, being able to eat with comfort, the vomiting having altogether ceased. Dr. Shepherd had not seen the patient again until a few days ago, when she sent for him ; he found she was suffering from diarrhœa. Since leaving hospital she had been attending to her household duties as usual, and had no trouble about eating. The tumour could still be felt somewhat larger than in the summer, but patient looked well nourished and had a healthy appearance and did not suffer. Dr. Shepherd said that he thought the results of this operation were excellent, and it was worth doing to obtain six months freedom from pain, and this comfort with the chance, judging from her present condition, of enjoying several months more of good health.

Dr. G. GORDON CAMPBELL said that there had been almost entire absence of symptoms pointing to gastric cancer previous to her admission to hospital. The tumour had been discovered on making an examination of the abdomen. There had been no pain or vomiting and general debility, for which she had spent a couple of weeks at the seaside without benefit, was the chief complaint. While in the medical wards vomiting had commenced, and at one time a very large quantity of stomach contents was expelled. The tumour was about the size of an egg, freely movable and situate about one inch above the umbilicus. Its connection with the pyloric end of the stomach was easily determined by dilating that organ. A test meal had been given and absence of hydrochloric acid demonstrated.

Pulmonary Embolism.

Dr. W. G. JOHNSTON showed a specimen illustrating ob-

struction of the pulmonary artery by an embolus. A number of rounded masses of blood clots obstructed the pulmonary artery in each lung. The history was interesting, both from a pathological and medico-legal standpoint. The man had been dead and buried about one week, when one of his friends made a curious statement: that the deceased had expected some accident to happen to him, and some persons were reported to have been laying traps for him. A post-mortem was ordered, and this curious condition of obstruction in the pulmonary artery found. No evidence of any primary source of an embolus could be detected, and this made it difficult to decide between embolism and thrombosis. In favor of thrombosis was the atheromatous condition of the pulmonary artery, the heart showing an unusual condition of great dilatation on the right side. He was said to have had a systolic murmur, transmitted very distinctly to the right, and owing to his having a very slow, heaving pulse, it was thought to be an aortic direct murmer, and there was some thickening of the aortic valve. Dr. Johnston, however, thought the murmur was produced in the right side.

Aneurism of the Thoracic Aorta.

Dr. ADAMI exhibited the specimen and read the report which will appear in a future number.

Dr. JAS. STEWART described the treatment of the case.

Dr. WESLEY MILLS emphasized the value of laryngoscopic examination in diagnosing aneurisms of the aorta.

Dr. FINLEY thought that Dr. Adami's explanation of the difference between the pulse in the two radials was very ingenious, and seemed to be confirmed by the anatomical conditions present. He also thought that the late Dr. MacDonnell's explanation of the tracheal tugging—the aneurism pressing upon the left bronchus and pushing it down with each pulsation—was borne out by this case.

Dr. LAFLEUR had at present under observation a case of thoracic aneurism, the diagnosis of which was made by a laryngologist, and not by himself. The patient had been

suffering from aortic insufficiency for fifteen years, and had been under the speaker's care for a year. He developed pain of a fixed character in the epigastrium, generally so severe as to prevent sleep at night. A troublesome cough, with huskiness, developed, and examination of the lungs gave negative results. There was no alteration in the size of the pupils, and no evidence of intrathoracic tumour. He finally had Dr. Birkett see the man, and an aneurism was detected projecting into the trachea, immediately above its bifurcation, about the size of a walnut. This case illustrated the importance of internal as well as external examination in such cases. Here, from the point of view of external examination, there was nothing at all to suggest aneurism, except trachea tugging, which was discovered to be present after the laryngological examination had been made.

Dr. H. D. HAMILTON had often treated the patient for his laryngeal complaint at the Longue Pointe Home. He happened to be at the Home one day examining some cases with Dr. Thompson when this last illness began. A sudden attack of dyspnœa had set in, during the course of a bronchitis from which he was suffering, which made them at first suppose the aneurism had ruptured. Pain was always a prominent symptom, and it was constantly referred to the right side. Belladonna plasters gave marked relief when used in addition to the internal medication. The patient lived just one week after this attack.

Three Cases of Pernicious Anæmia.

Dr. F. G. FINLEY read a paper on this subject, which will appear in a future number.

Dr. F. W. CAMPBELL thought the manner of administration might have something to do with the results obtained from arsenic in many cases. He thought it was Dr. Seguin who first called attention to the fact that arsenic, when given in small doses frequently repeated, was much more likely to be followed by beneficial results than when given in the usual manner, three or four times daily. Dr. Seguin, of

course, was speaking of chorea, and of the soundness of his advice in this respect the speaker had had personal experience in several cases. In like manner, however, he believed that in pernicious anæmia the effect of giving the drug every two hours, and gradually increasing the dose, ought to be tried.

Dr. D. F. GURD referred to the treatment by bone marrow and strophanthus which he recently observed in Edinburgh.

Dr. MCCONNELL had always believed that the presence of nucleated red corpuscles was necessary before the case could be considered one of pernicious anæmia. He thought that the explanation given of the absence of relative increase in the hæmoglobin in one case, viz., the smaller size of the red corpuscles, was a very interesting point.

Resuscitation of a New Born Child by Rhythmic Traction on the Tongue.

Dr. KENNETH CAMERON read a report of the case, which appears on page 902.

Dr. LAFLEUR remarked that Dr. Cameron's seemed to be one of the earliest reports in English of this procedure. His method differed from that of Laborde's, who advocated making only twelve to fifteen tractions per minute.

Dr. HINGSTON said it seemed to him that the virtue of the process lay in pulling the tongue forward. Shoving it backward was not only useless, but might be even injurious. Pulling the tongue forward and then relaxing it had been a method in use as long as he could remember.

Dr. LAFLEUR took exception to Dr. Hingston's sweeping condemnation of Laborde's method without being sufficiently acquainted with the details. If he had read Laborde's article, he would find the different procedures were based on sound physiological principles, and that the pushing backwards of the tongue was a very essential part of the process.

Dr. MILLS thought the method might be explained by reflex action.

Dr. CAMERON, in reply, said he had not remembered Laborde's exact experiment at the time; but he tried what he thought would be the natural number of respirations to the minute in a new born child.

Stated Meeting, March 22nd, 1895.

G. P. GIRDWOOD, M.D., PRESIDENT, IN THE CHAIR.

Aneurism of the Femoral Artery Treated by Ligature of the External Iliac Artery

Dr. BELL showed a man who had been the subject of an aneurism of the common femoral artery, which had been treated by ligation of the external iliac. The patient, a young man only 32 years of age, had never done any hard work, having been the caretaker of a private car on the Canadian Pacific Railway. He had had syphilis seven or eight years before, and there was no account of any systematic treatment having been employed. He had suffered from the aneurism for several months, until, when he came under observation, it was apparent as a large pulsating tumour extending right up to Poupart's ligament. Ligature of the external iliac was carried out in the ordinary way with great ease and satisfaction. Some interesting facts developed in connection with the restoration of the circulation afterwards. The operation was performed on Monday, January 28th. On the following Wednesday week (February 7th) pulsation was distinctly evident in the anterior and posterior tibial arteries. As to the aneurism, the pulsation ceased completely in it at the time of the operation, but commenced again, however, about ten days afterwards, and this was again followed by a gradual decline until the condition then present was reached. A little pulsation might be felt beneath and at the inner border of what was once the aneurismal mass, but which was much contracted. This pulsation, Dr. Bell thought, came from some of the enlarged collateral arteries in the neighbourhood. In answer to Dr. Girdwood, as to why there should be so much pulsation then present, Dr.

Bell remarked that the pulsation was completely arrested at the time of the operation; it had returned at the end of ten days. The pulsation, at the time the patient was shown, he did not believe was in the tumour proper, but from some source below, and brought about by the efforts of the system to establish the collateral circulation.

Experimental Cachexia Strumipriva.

Dr. WESLEY MILLS gave the subsequent history of the case presented at the previous meeting. The day after the dog was shown there had been moderate dyspnœa, cretinism, twitching and fibrillary contractions. Emaciation gradually developed and he died on the twelfth day after the operation was performed.

Experiments on Cerebral Localization.

Dr. WESLEY MILLS exhibited a mongrel dog about three months old, from which he had about ten days before removed the whole of the cortical area around the crucial sulcus, which functionally corresponded pretty well to the fissure of Rolando in man and the monkeys. The areas for the movements of the opposite fore and hind limbs and head movements had first been determined by electrical stimulation of the cortex, and the whole area and more than that had been removed, including a little of the white matter beneath on the right side. The only obvious symptoms present, in the dog shown, were slightly ataxic movements of the opposite limbs, especially of the front legs. There did not seem to be any appreciable weakening of muscles, at all events no real paralysis, nor were there any sensory symptoms, unless some partial loss of tactile and muscular sensibility on the affected side. The dog was able to stand and walk in half an hour after the operation, and had always been lively and well, never showing greater changes than when exhibited. An ether and chloroform mixture was the anæsthetic used. There was considerable loss of blood during the operation, but the wound healed rapidly. Antiseptic precautions were used, but not to the same extent as in a case of operation on man.

stitial tissue. The specimen, in fact, was undistinguishable from sections of what turned out to be a rapidly proliferating carcinoma of the prostate which he had brought before the Society two years before. The age of the patient, 27 years, was, however, against a diagnosis of this nature, nevertheless he felt it unwise to give an absolute opinion. At the operation the primary growth was removed and the ileum resected. The growth was clearly a sarcoma, a round-celled sarcoma of the submucosa infiltrating the muscular coats in a characteristic manner. The specimen showed parallel rows of round cells passing between the fibres of the circular muscle, and secondary growths were evident both on the serous surface and in the neighbouring lymphatic glands. It was difficult to conceive that this growth had been present, causing stenosis of the ileum for the number of years during which the subject had suffered from symptoms of intestinal obstruction. It would seem more probable that obstruction had been induced by some other cause and that the malignant growth was secondary to the chronic disturbance at the point. As shown by the specimen, the growth was about three inches broad; it was within one inch and a half of the ileo-cæcal valve.

The specimen of removed growth and intestine showed well the great dilatation and hypertrophy of the ileum above the growth.

At the autopsy the small intestine was found shorter than Dr. Adami had ever seen recorded. Including the removed seven inches, the total length from duodenum to valve was under eleven feet. This shortening was not only compensatory to the dilatation, but evidently there was an absence of ileum proper, for the valvulæ conniventes were continued in considerable frequency right up to the tumour. Whether the condition was congenital, or acquired through infantile or other intussusception, he would not venture to state, but suggested that the latter condition, with subsequent necrosis of the invaginated portion, would leave a condition capable of entirely explaining the subsequent

history, would leave, that is, an annular cicatrix and narrowing of the gut which might become the seat of malignant growth. The position of the stricture, close to the ileo-cœcal valve, was wholiy in favour of this view.

As shown by the second specimen the Murphy button had remained adherent save towards the mesentery. Here sloughing had occurred with passage out of the intestinal contents on either side of the ligatured mesentery, general peritonitis had ensued and had caused death.

The omentum was firmly adherent in the middle line over the old laparotomy wound, while in the right iliac region, over the area of intestinal resection, there was firm fibrinous adhesion. Evidently, until perforation occurred; the healing process had been advancing very favourably.

It was worthy of note that this case afforded another illustration of the danger of employing the Murphy button in connection with a viscus that had undergone chronic thickening. The thickened condition of the upper portion of the intestine as compared with the thinness of the part below the tumour was here extremely well marked.

Suppurative Arthritis due to Typhoid Bacillus.

Dr. C. F. MARTIN reported this case. (See page 888.)

Dr. GEORGE A. BROWN had had under his care the same case of arthritis reported by Dr. Martin. After leaving the hospital his arthritis had become aggravated and for a long time it was very severe. He had introduced a hypodermic needle, but could obtain no matter from the joint, and after trying a great many things he finally put it up in a plaster of Paris dressing and kept it there for a month. On removing it there was still a great deal of inflammation in the joint, so he replaced the plaster. At that time it was still in plaster, but the man was able to attend to his work. He applied the plaster from a little below the wrist joint to the elbow.

Rhythmic Traction of the Tongue.

Dr. MILLS gave an account of an experiment he had made on a very young kitten, which, he thought, threw some

light on the real nature of rhythmic traction of the tongue as a means of resuscitation in animals threatened by death from asphyxia.

A kitten, on whose brain he had been operating, succumbed to ether. At once rhythmic traction of the tongue was begun, and after 20 to 30 seconds a single respiration was taken; after a longer period no respiration followed this procedure till the skin over the chest was pinched, when another gasp followed. The method was still further tried to no purpose till the face was sponged with cold water, when one or two gasps followed. It seemed to him that reflex action was plainly the only way to explain these results. The animal was not revived in this case as the sphincter had relaxed and urine had been passed, which was in his experience a sign of death, in the lower animals at all events.

Some Interesting Conditions Attending Post-Nasal Growths.

Dr. H. D. HAMILTON read a paper on this subject, which will be published in the July number.

Stated Meeting, April 5th, 1895.

G. P. GIRDWOOD, M.D., PRESIDENT, IN THE CHAIR.

Multiple Osteo-Myelitis.

Dr. G. E. ARMSTRONG showed a man whom he had treated for this disease; the report is as follows;

M. M., male, æt 25, admitted to Montreal General Hospital on November 8, 1894, complaining of pain in left hand and arm. Present ailment began six months ago by dull, aching pain situated for the most part in the elbow and shooting up and down the limb. Latterly there has been swelling of the hand and forearm.

Presonal History—Native of England; in Canada four years. Three years ago had swellings (white) behind right ear and over right sterno-clavicular joint. These burst after five months. Entered hospital and both sinuses were scraped out. The sterno-clavicular wound healed, but

mastoid has discharged ever since and has been scraped three or four times.

One year ago swelling developed on right hand with pain and tenderness. It was opened and treated and eventually healed, but recurred in six months and was again opened. Five years ago he had venereal sores, three in number, coming on two weeks after connection, accompanied by phimosis, necessitating circumcision. No rash, sore throat, or alopecia, but one month later had pains in bones and joints.

Family History—Non-tubercular.

Present Condition—Temperature 98½°, pulse 76, respiration 22. Fairly well nourished, sleeps well. Complains of pains in left upper extremity from hand to just above elbow. Left forearm is somewhat swollen, especially about wrist and elbow. Tenderness is more marked about the olecranon. Pain on movement of elbow. No redness and very little heat. Sinus in right mastoid discharging a small quantity of icherous pus. No pain or tenderness. Scars present on right hand and sterno-clavicular joint.

Urine amber, turbid, neutral; no albumen or sugar.

Hot fomentations applied to left arm.

November 16. Right arm painful. Examination shows tender point over olecranon; painted with tr. iodi.

January 2. Since last note the condition has steadily grown worse in the left arm and remains about the same in the right. Hot fomentations have been continuously applied and elevation by suspension tried. An orchitis has developed (left), the testicle becoming the size of an orange.

January 4. Upper part of posterior surface of ulna and dorsum of fifth metacarpal trephined.

January 5. Relief of pain, some movement

January 10. Relief of pain in arm operated on, and also in the other olecranon. Orchitis gone. Temperature normal since the 6th.

January 24. Patient complains of severe headache with nausea. Arms not painful, lungs normal, temperature 100°.

January 26. Temperature steadily rising, to-day 102½°. Headache and nausea increased in severity. Headache frontal on the vertex and passing down behind the right ear.

January 27. Examination of eyes shows congestion and blurring of discs, more marked on the right side.

January 28. Given ether, and the tympanum cleared out through the external meatus and also by new trephining. Old sinus full of dark purulent matter, as was also the tympanum. Brain membranes exposed through both openings in mastoid.

January 29. Better, temperature lower, headache less severe. Patient has slight cough and rusty expectoration: lungs apparently normal.

February 1. Temperature fallen to normal.

Dr. Armstrong said that in these cases the osteo-myelitis had been proved to be due to different micro-organisms—the staphylococcus aureus, the streptococcus and pneumococcus had all been cultivated from these lesions Whether these organisms had all been present during the years the disease was endured it was hard to say, but, in his opinion, the affection had been present for years, and sometimes certain favourable circumstances combined to afford them an opportunity of rapid development or multiplication. At the time of speaking the patient was in good health, better than he had been for years, and there was evidently no active disease going on.

Compound Depressed Fracture of the Vault of the Skull.

Dr G. E. ARMSTRONG exhibited a man on whom he had operated for this condition. His history was:

E. H., æt. 26, admitted March 6th to the Montreal General Hospital with a depressed fracture of skull. Patient was struck by a train on day of admission. When picked up he was unconscious, smelt strongly of alcohol and tossed his arms about violently. Examination showed laceration of scalp extending from left parietal eminence to left

external angular protuberance but only, involving the superficial layers. Depression in skull can be felt over the same area. Pupils natural, great congestion of left eyelid. No subconjunctival hæmorrhage. Pulse slow, 56.

March 7, 6.30 p.m. Still unconscious, quiet. Given ether. Incision enlarged and deepened, etc.

March 8. Somewhat recovered consciousness. Asks for food, but gives many names. Dressed, outside dressing only.

March 9. Conscious at times; irritable and answers foolishly. Sometimes passes urine and fæces into bed, and at other times calls for receptacle.

March 12. Dressed. Catgut drain slipped out owing to sudden movement on part of patient. Is irritable and requires holding during dressing, otherwise is fairly conscious, but cannot give his name.

March 14. In same stupid condition. Continually poking finger in under his left eye.

March 17. Temperature rose suddenly last night to 101⅕°, this a.m. 101. Patient wholly unconscious. Both eyelids red, glistening, and œdematous. Dressed. Œdema of scalp and forehead to the right of wound, none on the left. Irrigated and catgut drain reinserted.

March 18. Temperature remains up and œdema still present. Dressed. Fluctuating surface over area to right of wound; opened, evacuating a large amount of pus, leaving bare bone and showing another fissure running longitudinally. No communication between the two wounds except by probe. Drainage tubes inserted in all.

March 20. Temperature lower. Patient again somewhat conscious.

March 21. Oozing; dressed; clearing up; wholly conscious.

March 25. Temperature normal since 22nd. Dressed.

March 27. Up and walking about.

March 31. Dressed.

Dr. Armstrong described his operation as follows: He

elevated the bone, and after washing out the wound found no evidence of injury beneath the membranes. The bone was then replaced in small pieces. This was done on the 7th; for nine days afterwards the temperature remained normal, but the patient was unconscious for most of the time. When the unconsciousness passed off delirium set in; he disturbed the dressings, fingered the wound and, he thought, innoculated it. The temperature then began to rise and went up to 102.4°. Although carefully redressed, the mischief seemed to have been done, as an abscess developed over the external angular process. In the subsequent manipulations entailed by these complications another fissured fracture was discovered.

Dr. Armstrong thought the interest of the case was chiefly in connection with the man's future, and what after trouble of a cerebral nature was in store for him. He asked for an expression of opinion about opening the membranes in these cases. He had here a man decidedly ununconscious; there might have been laceration of the brain, but the membranes were intact and normal and pulsation beneath was distinct, and he did not think it wise to open them in the presence of a possibly septic wound.

Dr. JAMES BELL regretted not having heard the report of the first case. In the second case he was not quite clear as to Dr. Armstrong's description; he would like to know if portions of the bone were removed and afterwards replaced in small fragments, and which, in spite of the septic condition present, retained their vitality and developed. With regard to the point Dr. Armstrong wished discussed, he thought it was very hard to lay down any rule in such cases; it was a question to be decided upon at the moment, and under the circumstances he felt that he should have acted as Dr. Armstrong had done. There being no localizing symptoms within the membranes pointing to any particular area, and considering the danger of introducing sepsis, he could not see that any other course lay open to the careful surgeon.

Dr. ARMSTRONG, in answer to Dr. Bell's question regarding the replacing of the pieces of bone, after mentioning the dimentions of the whole area of removed bone, said that several small pieces not more than half an inch square were replaced, and as he had seen nothing of them since he presumed they were still in the wound. The wound, however, he did not believe was infected until later, which might remove that obstacle to union taking place. At any rate the fragments were there as far as one could feel and appeared to be good firm bone.

Seborrhœa.

Dr. J. M. JACK read a paper on this subject, which will appear in a future number.

Dr. SHEPHERD said that he must acknowledge himself disappointed with the paper; he expected something more modern. This was seborrhœa and its treatment of twenty years ago which Dr. Jack had given. The latter had said nothing of the micro-organisms which caused this disease, nor of seborrhœa congestiva, nor of Unna's theories with regard to the sudoriparous glands, all of which he had been in hopes of hearing and getting fresh light upon. The most important thing for the general practitioner to remember was that seborrhœa was apt to run into eczema, and it was sometimes hard to draw the line between the two conditions. With regard to the general treatment, it was not hard to treat, the diagnosis being once made. In the first place seborrhœa ought never to be diagnosed from the scalp eruption alone, the body ought also to be stripped and examined, and often what first appeared a seborrhœa would turn out to be a psoriasis. As to the treatment, he thought the germicidal treatment by far the best, and he believed that micro-organisms were always at the bottom of the trouble. Cases occurred in the robust as well as in the weak; common dandruff was seborrhœa. Seborrhœa often spread from the head all over the body and could be treated only be germicidal remedies. He himself preferred mercurial treatment to all others. The remarkable results

obtained by treating seborrhœa of the scalp with the oleates of mercury, especially where it had gone on to the congestival stage, had often been observed by his students, past and present, at the General Hospital clinics.

Dr. G. GORDON CAMPBELL believed that general treatment, in most forms of skin disease, was only needed when the general health needed it. Dr. Campbell, in Dr. Shepherd's absence last summer, had conducted his skin clinic, and as he had seen so much treatment by mercurial ointments in seborrhœ, he thought it a good opportunity to try other forms. In almost every case he found he had to fall back on the mercurial, and had to use it strong. The oleate of mercury which he was accustomed to use 1 to 8 or 1 to 20. Dr. Shepherd prescribed 3 to 1. He certainly, therefore, agreed with Dr. Shepherd that there was nothing like mercury for getting a speedy affect.

A New Form of Ether Inhaler.

Dr. JAMES BELL exhibited an aluminium cone, which is fully described in the May number.

Dr. G. G. CAMPBELL said that the first point made by Dr. Bell in favour of the inhaler described by him, and one on which he laid great stress, as being an advantage lacking in other inhalers, was that it could be sterilised. Two years before Dudley Buxton, of London, had perfected a Clover's inhaler, the different parts of which could be taken part and sterilized. Dr. Bell's next statement was that ether was not a supporter of respiration. It was a very important point to remember that it was possible to asphyxiate with ether. Asphyxia could be produced in two different ways: (1.) By replacing the oxygen of the air with an irrespirable gas, such as nitrogen or ether, and then it was simply want of æeration of the blood that produced the condition. (2.) By replacing it with a poisonous as well as irrespirable gas, such as chlorine, which would then add to the effects of the withdrawal of air, the effects of the poison. As far as he could understand, the great argument of the opponents of Clover's inhaler, apart from

the question of uncleanliness, was, that it was very dangerous to rebreathe the same air, as, besides being deprived of its oxygen, it was filled with poisonous materials from the lungs of the patient. Dr. Campbell thought he could show that the whole of the possible degree of asphyxia, which it was claimed was produced, must be due to withholding pure air and not to any poisonous materials present. Of the whole amount of air in the lungs, one-fifth was changed at each breath. This fifth was the vitated air often referred to as being so injurious to rebreathe. That it differed in any respect from the air left behind it at the close of exspiration, it was absurd to contend. If a person was breathing at the rate of twenty to the minute, sufficient pure air was taken into the chest to fill it only four times a minute, ($20 \div \frac{1}{5} = 4$) and the individual was thus continually breathing the bad or vitiated air diluted with one-fifth of pure air, or, in other words, a mixture containing four-fifths of air loaded with impurities, and one-fifth of pure air; and yet was not suffering from poisoning. Furthermore, if the person did not get the one-fifth of pure air every breath, or, to put it in another way, four chest-fulls a minute, asphyxia of greater or less degree according to the extent that pure air was withheld, would be produced. What Dr. Campbell wished to make clear was this; that asphyxia produced in this way was not the result of breathing a poisonous gas, but was the result of not getting sufficient fresh air for proper äeration of the blood. Suppose the person to be breathing forty to the minute, he would get as much good air if only every second breath was pure air, as he would still be getting the four-chest fulls every minute; and if he breathed or rebreathed the already respired air in the other twenty breaths, and no further demand was made upon him, the conditions under the two cases were the same. The fear that seemed to be constantly present with some men of allowing their patients to breathe any of this so-called poisonous gas, might be in some measure removed, if they remembered that the air in their own lungs contained constantly four-

fifths of it. By giving, as he did, two breaths of pure air to every one from the bag in using Clover's inhaler, he, Dr Campbell, thought it could easily be seen that the patient was getting as much good air a minute as in quiet breathing, when it was remembered that the rate of breathing was twice as rapid as normal.

Dr. Campbell considered the aluminium an improvement on the ordinary cone for the reasons stated by Dr. Bell, and that, in the absence of better apparatus, ether could be given well by a cone, provided it was administered slowly at first and the amount gradually increased. Asphyxia, however, could be produced by replacing too much of the air breathed by ether vapour as well as by respired air.

Dr. F. W. CAMPBELL had had an opportunity of examining this inhaler a few weeks before, through the courtesy of the manufacturer. It seemed to him a very admirable one. His experience with anæsthetics was extensive. There was no doubt that the old fashioned cone was an abominable thing to use from the point of view of cleanliness, and this one seemed a very great improvement. It had, however, one disadvantage, it did not pack easily in the surgical bag. However, it struck him that in using Dr. Bell's arrangement of packing with cotton that it would hold very little ether. It was in this respect much better than the sponge, which, when it became saturated, allowed the ether to overflow.

Dr. KENNETH CAMERON considered the aluminium cone a decided improvement on the old red flannel one, but he had to protest against Dr. Bell's strictures on Clover's inhaler. The great objection raised was that the patient was re-breathing his own poisonous exhalations, but he felt that the ether vapour disinfected this vitiated air. Having had experience with both forms, he considered that the Clover inhaler gave the greater satisfaction, when properly used, for with it the patient could be more rapidly anæsthetized, the amount given could be regulated, and the after effects in his experience were not severe, while with the cone the patient breathed air, either saturated with ether or

containing no ether at all. It was his practice always to stay with the patient until there was some sign of returning consciousness, such as opening the eyes, or putting out the tongue when told to do so, and this period varied from five to twenty minutes, never longer. He therefore felt that when the anæsthetist once fully understood the use of Clover's, he would not willingly give it up in favour of any other form of inhaler.

Dr. GURD hardly thought it possible that anyone who had used Clover's inhaler many times could give it up. With it the amount of ether could so easily be regulated. Dr. Bell's objections could be done away with and the advantages of Clover's inhaler yet retained by simply not using the bag. He maintained that almost any individual could be anæsthetized and any operation carried through from beginning to end without using the bag. In the course of nearly all major operations there were stages when very little ether was needed ; if deeper anæsthesia was required quickly the bag was useful though not essential.

Dr. ALLOWAY protested against the statement that Clover's inhaler was dangerous. Ether, like many other drugs, was dangerous if used by stupid or unskilled persons, quite independent of the instrument employed in its administration. He had had much experience with both the Clover inhaler and the cone; from the former he had never seen any danger resulting, although such had often been the case with other instruments. His experience corroborated the assertions of Dr. Gurd, and he was certainly in favour of using the inhaler without the bag. At the same time, when confident of the ability of the anæsthetist, even with the use of the bag he had no anxiety. Some patients seemed to be brought under the influence quicker when the bag was used. Allis' inhaler was one of the cleanest instruments used. It had a roller laced on metal bars and which could be replaced, leaving only metal to cleanse. As regarded the necessity of making the Clover's inhaler more cleansable, this was simply a matter of

technique; and there now was one coming out which could be taken to pieces and the parts sterilized.

Dr. SHEPHERD would like to hear something more definite about the cases referred to by Dr. Bell, where the Clover inhaler proved so dangerous. He had certainly seen many instances where the patient seemed in danger from the use of the cone, but never any when Clover's inhaler was used by a skilled anæsthetizer.

Dr. BELL said he had anticipated some discussion on his paper, and the result had more than realised his anticipations. First in reply to Dr. Gordon Campbell s arguments, which he regarded as pure sophistry; Dr. Campbell said a new Clover's inhaler was coming out, which could be sterilized as completely as any rubber goods could possibly be. That was just the point; ordinary rubber goods could not be properly sterilized. They could not be rendered aseptic by heat without destruction, and he knew of no chemical substance by which this could be accomplished. To begin with, there were one or two fallacies with regard to the Clover inhaler. If you did not use the bag, you certainly had an instrument on the same principle as the cone. In the cone, the liquid ether was poured over a large surface, and vapourised more rapidly; in the other case, it remained in a metallic reservoir and through that reservoir the air was inspired. With regard to the indicator, it indicated nothing more than that a certain amount of air was drawn through a larger or smaller orifice into the ether chamber—the whole of the semicircular orifice, or the half of it, or the quarter of it. It did not take into account the air received from other sources. If the space was one-half open, the patient had to inspire more vigorously to get the necessary air. In using the instrument without the bag the principle was absolutely the same as with the cone, with the exception that the ether remained in liquid form, over which the air passed, whereas in the cone it was absorbed by cotton and a large amount was wasted. With regard to Dr. Campbell's mathematical problem, without going into the physiology of

respiration, the fact remained that whether there was $\frac{1}{5}$ or $\frac{1}{50}$ of pure air in each inspiration, it was these inspirations that sustained life ; and if we could only get half the amount of air necessary to sustain life we were badly off. This was a principle recognized in the construction of all public buildings, that there must be a certain amount of air space for each individual. So in the operating room, a certain amount of air was required to sustain the patient for a certain interval, and if he was allowed that amount in twice, thrice or four times that interval, it was equivalent to closing him in a room (which had a capacity for one man only), with two, three or four others. He did not speak of vitated air, he spoke of it as re-respiring the same air—breathing carbonic dioxide, and noxious exhalations, that was, breathing impure air and preventing the influx of oxygen from the outer air. As regards the patient breathing twice as rapidly, that was another fallacy. He did not believe a patient breathed twice as rapidly, unless it was in the same sense as a pneumonia patient breathes twice as rapidly as in health—simply because he was being asphyxiated.

In regard to the practical example of the bad effect of the Clover inhaler, the colour of the patient often showed the results of that apparatus, and the operation had frequently to be stopped for the time being. It was perfectly clear to him that patients, taken one after another, respired ether through the cone, apart from such accidents as spasm of the glottis, &c., with less danger, and never developed that dark livid colour frequently seen when the Clover's ininhaler was used.

In answer to Dr. F. W. Campbell's question, as much cotton-wool can be put in as required. The cone passed around was a small one, and contained about the average amount of cotton.

In reply to Dr. Alloway, who spoke of an accident which had occurred recently in New York, he did not know the particulars of that accident, but he knew of

many accidents occurring outside of New York through the use of the Clover inhaler—no fatal ones probably, but many times he himself had been very anxious about patients during the administration of ether, and most of them when the Clover's inhaler was used. Dr. Shepherd wanted some definite cases mentioned; well it was within Dr. Shepherd's recollection that the Clover inhaler was introduced into the General Hospital, used for several years and then discarded, and did not re-appear for years. The reason was this, a very nearly fatal accident occurred, and when it was investigated it was discovered that the anæsthetist forgot to put ether into the reservoir. Now it is absolutely impossible for any man to administer ether with a cone, and make a serious mistake, unless by giving too much, and this can be done with any instrument. Everybody knew that ether might be given to such an extent as to paralyse the respiratory centre and kill the patient without any untoward accident having occurred in any other way. That was the only possible way harm could be done by the cone; whereas with the Clover inhaler he might forget to put in ether, or let it run out, let it spill out, and for these reasons the relative danger of the two methods of giving ether was, as Dr. Alloway put it a few moments ago, a matter depending largely upon the ability of the anæsthetist, the Clover inhaler being especially dangerous in unskilled or careless hands. In regard to his remarks on vomiting, Dr. Bell referred to the vomiting following the anæsthesia, and in his experience he found vomiting far more frequent after the use of the Clover inhaler. With regard to Allis' inhaler he had nothing to say, except that it was not clean; it was the rubber part that he objected to. An essential part of it was composed of rubber, and this could not cleaned, much less made sterile, as sterilization is understood in a surgical sense. In dealing with open wounds it was not only very important to have clean instruments, but in many serious operations about the brain, head, face, neck and upper extremity, it was very important to have an inhaler which

could be made clean and sterile, and put into the hands of a man who had already sterilized his hands, clothing, etc. He was sure there was no surgeon present who had not felt the inconvenience of this rubber bag flopping about the head and neck while these parts were being operated upon.

Dr. SHEPHERD said that in the General Hospital case referred to, Dr. Bell, the anæsthetist, should have been discarded and not the inhaler.

Dr. G. GORDON CAMPBELL explained that all the rubber portions of Clover's inhaler could be boiled without injury, provided that they were put on in cold water and not allowed to touch the bottom of the boiler. He always sterilized his own in this way.

THE

Montreal Medical Journal.

VOL. XXIII. JUNE, 1895. No. 12.

IDENTIFICATION OF SPECIES OF BACTERIA IN WATER.

This subject was brought up at the meeting of the American Public Health Association, held in Montreal, September 25th, 1894.

The Committee on the "Pollution of Water Supplies" submitted a proposition that the bacteriologists of America should work together to evolve a scheme for the adoption of standard culture media and the use of them along definite systematic lines.

This proposition, which came from McGill University, was received with considerable favour, and a sub-committee was appointed by the Association and a grant made for preliminary expenses.

The committee consisted of the following four members: C. A. Smart, M.D., Surgeon and Major U.S. Army, Chairman of the Committee upon Pollution of Water Supplies, A.P.H.A.; G. W. Fuller, ScB., Biologist in charge of the Lawrence Experimental Station, Massachusetts State Board of Health; Wyatt G. Johnston, M.D., Bacteriologist to the Board of Health of the Province of Quebec; J. George Adami, M.A., M.D., Professor of Pathology, McGill University, Montreal. They immediately got to work, commencing by sending a circular letter to all the laboratories on the Continent to obtain the opinions of bacteriologists on the preparation and mode of employment of culture

media, the variability of species and the identification of bacteria.

The replies were numerous, and many and diverse opinions were expressed. The committee, after tabulating these replies, sent out another letter reviewing in general terms the information received and setting forth a number of points on which discussion was invited. It was also proposed to hold a meeting in New York, and the date June 21st was decided upon as being the most suitable.

The whole project from the start has received the full support of the Bacteriological departments of many State and Provincial and Municipal Boards of Health, as well as of the principal Universities of the United States and Canada.

The meeting will be a representative convention of bacteriologists and we expect practical results from this, the first assembly of its kind.

Dr. Adami, McGill University, is acting as the secretary of the Committee, and from him copies of the letters and all necessary information can be obtained.

CANADIAN MEDICAL ASSOCIATION.

This is the time of year when the busy doctor allows his thoughts to wander away from the dusty city towards green fields and babbling brooks and he begins to plan for his summer holiday. While mapping out where he will go, we venture to suggest that he arrange to spend a few days in Kingston, Ont., where on August 28th, 29th and 30th will be held the annual meeting of the Canadian Medical Association. By so doing he will add to the pleasure of his trip, to say nothing of the profit to be gained, for this promises to be one of the largest and best conventions ever held in Canada.

Dr. James Stewart, of Montreal, will deliver the address in Medicine, and Mr. J. H. Cameron, of Toronto, the address in Surgery. It is intended to have a skin clinic, at which several interesting cases will be presented and these will

be discussed by prominent dermatologists. There will probably be other clinics as well.

Another pleasure partly expected is that of having the first President of the Association, Sir Charles Tupper, at the meeting.

Dr. F. N. G. Starr, Toronto, Secretary of the Association, will be pleased to give any information regarding the meeting.

THE PHYSIOLOGIST LUDWIG.

At a time long subsequent to the date at which this great physiologist took his degree and began to be a power in German medical education, physiology was regarded by the great multitude of undergraduates, and even graduates in medicine, as one of the "primaries" that a man must "get through," but which in reality only little concerned him who was engaged in the actual practice of medicine. Then, as now, anyone could understand the advantages of attendance at hospital clinics. It was, however, for the few to see that the foundations of scientific medicine were laid not in the hospital, but in the laboratory—in a true understanding of scientific biology; and indeed what there was of medicine as a science came from those chiefly who laboured quietly in the laboratory or who observed in the wider domain of nature.

To the great mass of medical men of the present day even the name of Ludwig may not be familiar. But one of the most hopeful signs of the times is the fact that everywhere now a certain not inconsiderable number of young medical men become investigators of problems which are primarily physiological ones. It may be that yet for one that can see the bearing of physiology on practical medicine, there are ten or a score or a hundred who can perceive that a sound pathology is essential to scientific medicine. But what is sound pathology but a combination of anatomy, physiology, chemistry, and biology applied to man finally, though primarily derived from a study of the lower animals.

Ludwig, born in 1816, graduating as doctor of medicine in 1839, and very soon after entering on that extended career of physiological teaching and investigation which long since gave him a world-wide reputation, was essentially a pioneer in physiology as an experimental science. For when this enthusiastic investigator and inspiring teacher entered on his life-work, physiology was in a very crude condition, not only wanting to a great extent in a foundation scientifically laid in experiment and accurate observation, but hampered by theories without basis in fact, it is true, but nevertheless universally accepted. Fortunately Ludwig was a believer in that sort of physiology which is founded on direct experiments of a physical and chemical character. These views he may have carried too far in his opposition to the vitalistic theories that were prevalent, but the latter, at least in their crude form, were driven from the field.

One of his own pupils, Heidenham, with a somewhat more penetrating ken, may have been needed to prevent Ludwig's school from going too far with mechanical explanations ; but the fact remains that if Ludwig is not the founder of modern physiology, he has had more influence on its development than any other man.

Comparatively few of the leading physiologists in Great Britain or America, not to mention Germany or other continental countries, but have been either pupils of Ludwig or his grand-children, so to speak, in physiology. Ludwig certainly founded a school of physiology whose influence was dominant till very recently everywhere.

Research after research made in his laboratory appeared in numerous periodicals, including Ludwig's *Arbeiten*, the special medium for such publication. Leipsig became the Mecca of the physiologist. The Cambridge school was in a sense a sort of Leipsig colony, while Prof. Bowditch in Harvard was Ludwig's most distinguished pupil in America.

Ludwig's principal bias and the facts just mentioned,

together with his great personal influence over his pupils, explains in no small degree the status of physiology to-day.

Instruments found in all physiological laboratories bear the great investigator's name. These may be replaced by other and better ones in time, but Ludwig's influence on physiology and on its leading teachers and workers will be lasting.

He secured the confidence and regard of young men by his kindly sympathy, his cheerful aid and that inspiration which it is given to but few to be able to impart.

Till within recent years he was an investigator as well as a teacher, while to the last he was the inspiring head of a famous school of physiological research. He died at the ripe age of 79 years.

He was a man of great candour and simplicity of nature. The writer recalls with perfect distinctness a conversation of over ten years ago in which these traits were admirably shown.

It is difficult to estimate the value of such a man to medicine. He was the originator of a large part of what is best known in connection especially with the circulation, though of course his teachings required considerable modification of late years. A long, distinguished and worthy career has come to a close; an able and noble man has passed away. The world owes him much and the physician and the scientist should hold his memory dear.

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